JUL 21 1944

JULY, 1944

fuel oil & oil heat

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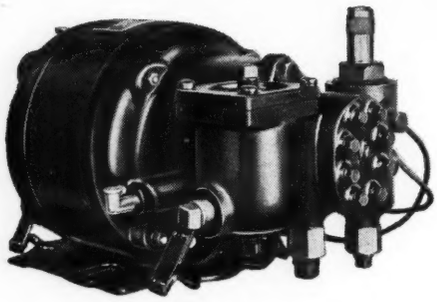

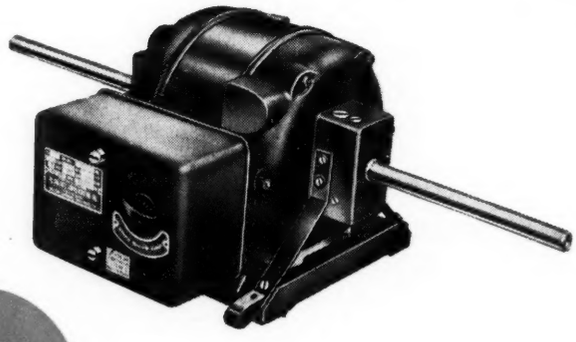

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SPECIAL FRACTIONAL HP MOTORS DESIGNED TO FIT THE APPLICATION

If operating characteristics, speeds, hazards, ambients, etc., were always similar for products . . . standard "off-the-shelf" motors could be used for most cases. However, experience proves that operating conditions do vary in motor applications — and the only way to meet performance requirements is to use a special motor specifically designed to meet operating conditions such as load cycle, speed stability, speed control, reversal of rotation, atmospheric conditions, quietness, etc.

For over 50 years Holtzer-Cabot has concentrated its facilities in the design and application of special fractional HP motors to meet the exacting performance requirements of such products as instruments, aircraft, machine tools, business machines, etc. And although today all of our energies are being utilized in building motors for military products, our motor development engineers will gladly discuss your peace-product motor problems with you.

HOLTZER-CABOT

THE

HOLTZER-CABOT ELECTRIC COMPANY

Designers and Builders of Special Fractional HP Motors and Electrical Apparatus

125 AMORY STREET, BOSTON 19, MASS.

New York, N. Y. • Chicago, Ill. • Philadelphia, Pa.

fueloil & oil heat

VOL. 3 NO. 3

JULY 1944

Names in the news

M. L. Judd, recently appointed sales manager of Delco's Appliance Division, Rochester, N. Y., was elected a director of Oil-Heat Institute of America at the meeting of the Board at New York, June 13. He replaces C. E. Lewis, OHI president, as the Delco representative on the Board of Directors, following Mr. Lewis' resignation from Delco to join the Perfex Corp., Milwaukee, as manager of the Controls Division.

Mr. Judd

Robert J. Hull has been named manager of the New York division of Cities Service Oil Co., Pa.

Ralph C. Cameron, has been appointed director of merchandising for the Airtemp division of Chrysler Corp., and will continue to direct postwar planning activities, according to Paul B. Zimmerman, vice-president. V. P. Black will continue as advertising manager, W. H. Knowlton as sales promotion manager, and Paul H. Dow will continue in charge of sales training under the direction of Mr. Cameron.

Mr. Cameron

C. E. Lewis, president of Oil-Heat Institute, who joined Perfex Corp., June 1, was retained as president of the organization at the June 13 meeting of the Board of Directors. Mr. Lewis was elected president by the board last March as a manufacturer member. He was re-elected to the board at the June meeting to fill a vacancy in the Accessory Division membership.

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Canadian: $4.35
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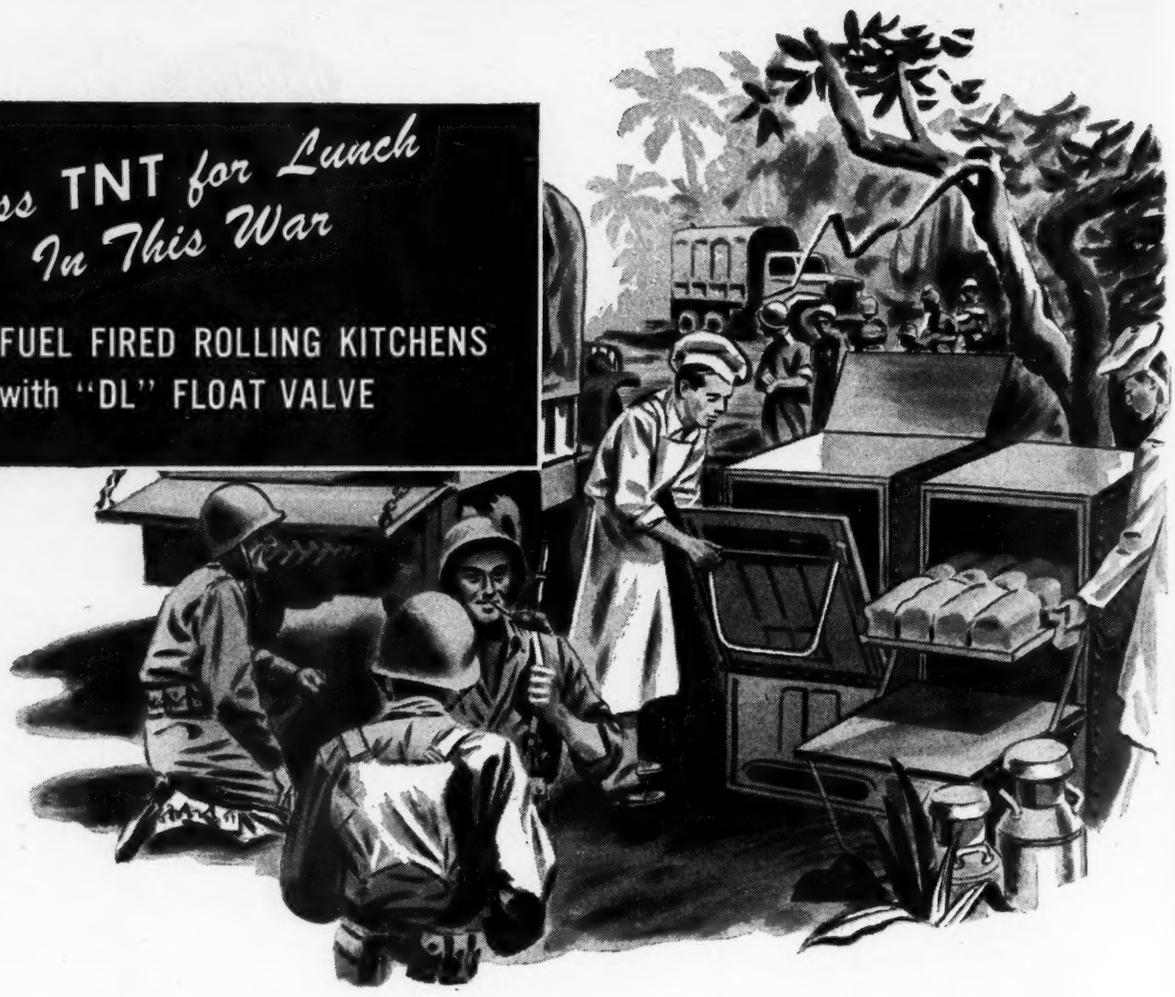
Less TNT for Lunch In This War

LIQUID FUEL FIRED ROLLING KITCHENS with "DL" FLOAT VALVE



In World War I, the smoke of coal or wood fired rolling kitchens made a fine target for artillery and bombers. Nothing could be done to conceal it, and as a result, bombardment and bombing at mealtime were a regular diet.

Our doughboys now eat meals prepared in field ranges fired by gasoline or oil. No telltale smoke reveals the location of mealtime concentrations of men. Kitchens can be operated after nightfall if needed, because they do not glow. "DL" Float Valves control many of these field range burners.

All over the world, wherever our fighting men are stationed, will be found cooking ranges, furnaces, tent heaters and water heaters equipped with "DL" Float Valves.

Because they are very reliable and easy to clean and service, "DL" Float Valves are in demand by manufacturers of war equipment.

When oil burning stoves and furnaces again appear on the market, make sure the line you select is equipped with "DL" products.

An Exclusive "DL" Float Valve Feature . . . .

AUTOMATIC TEMPERATURE COMPENSATION

Fuel oil viscosity increases as its temperature drops. An ordinary needle or float valve either does not feed enough when oil is cool or cold, or feeds too much when it is warm. • The "DL" Float Valve has a simple temperature compensation which opens the valve more when the oil is cold—reduces the orifice when the oil is warm. • This is an exclusive "DL" feature.

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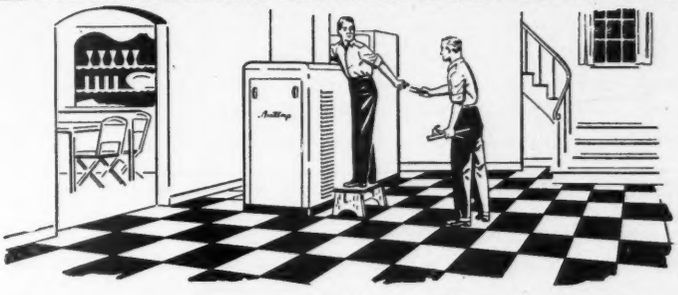
"DL" Heating and Refrigeration Controls • Engine Safety Controls • Safety Float Valves and Oil Burner Accessories • Radiator Valves and Balancing Fittings • Arco-Detroit Air and Vent Valves • "Detroit" Expansion Valves and Refrigeration Accessories • Air Filters • Stationary and Locomotive Lubricators

GOOD EQUIPMENT + GOOD INSTALLATION =CUSTOMER SATISFACTION!

The quality of the installation is as important as the quality of the product. That is why Chrysler Airtemp has special, practical training courses on up-to-date selling and installation methods. Chrysler Airtemp heating equipment...burning all types of fuel...is "packaged" at the factory to make installations as simple as possible for the heating dealer.

THE TRIPLE LINE



PROPER INSTALLATIONS ARE MADE EASIER BY CHRYSLER AIRTEMP "PACKAGED" PRODUCTS

A new day is dawning in the heating industry. New, compact and more efficient units will bring new and greater indoor comfort to American homes.

Chrysler Airtemp—a pioneer in "Packaged" temperature-humidity control units—is pioneering, through advanced engineering and design, important new principles in domestic heating and cooling equipment.

The same spirit is developing a new conception of factory-dealer relationships which will enable heating dealers to "streamline" their operations. Dealers will be in a position to give home owners an assurance of dependable performance based on proper, adequate heating units—properly installed—to meet individual home requirements.

The Chrysler Airtemp Triple Line . . . heating, cooling and commercial refrigeration . . . offers heating dealers an opportunity for *12 months profitable operation*. Direct dealer contracts will be available for just the Chrysler Airtemp heating line—or for heating in combination with air conditioning or commercial refrigeration—or for all three lines.

You can win volume in sales and customer satisfaction . . . backed by Chrysler Airtemp products, as well as modern merchandising and installation methods.

The Indoor Climate Institute is making the American Public Conscious of the Need for Greater Indoor Comfort and Health.

MEMBER I.C.I. INDOOR CLIMATE INSTITUTE DIVISION OF AMERICAN INDOOR COMFORT

Next Month's Advertisement Will Be Devoted to the Subject of Service

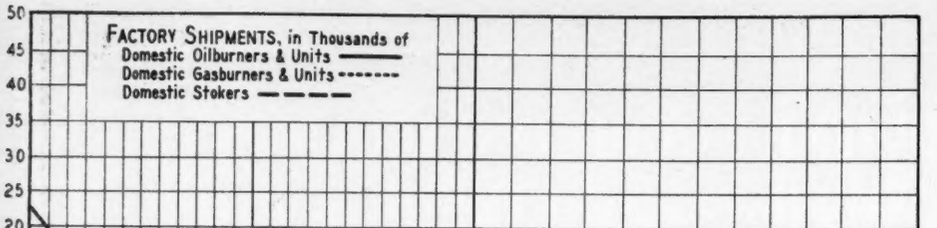
BUY WAR BONDS

CHRYSLER AIRTEMP

AIRTEMP DIVISION OF CHRYSLER CORPORATION • DAYTON, OHIO

Tune in Major Bowes every Thursday, CBS., 9 p.m., E. W. T.

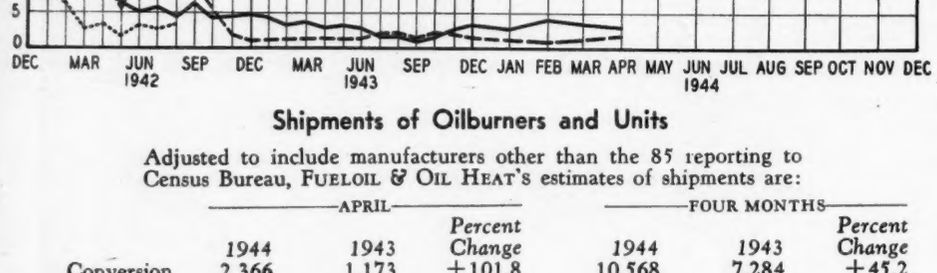
fueloil & oil heat



Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 85 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	APRIL			FOUR MONTHS		
	1944	1943	Percent Change	1944	1943	Percent Change
Conversion	2,366	1,173	+101.8	10,568	7,284	+45.2
Boiler units	318	882	— 64.0	1,185	3,357	—64.9
Furnace units	217	574	— 62.3	1,340	2,921	—54.3
All domestic	2,901	2,629	+ 6.6	13,093	13,562	— 3.5
Commercial	2,426	3,818	— 36.5	11,612	16,013	—27.5
Total	5,327	6,185	— 13.9	24,705	29,313	—15.7



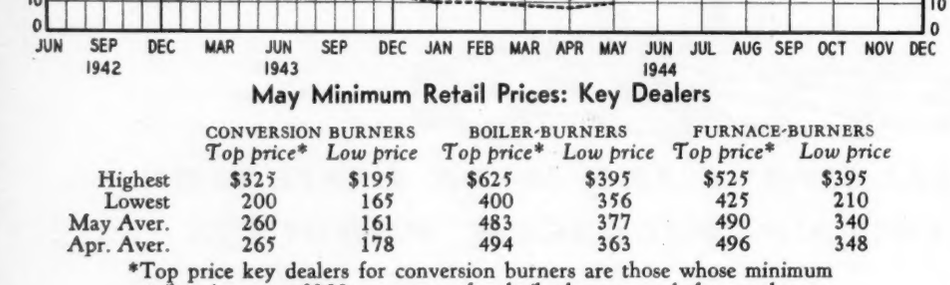
May Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	*Top price**	*Low price*	*Top price**	*Low price*	*Top price**	*Low price*
Highest	$325	$195	$625	$395	$525	$395
Lowest	200	165	400	356	425	210
May Aver.	260	161	483	377	490	340
Apr. Aver.	265	178	494	363	496	348

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more; for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: Jan. 1940 is 100%

WHOLESALE				RETAIL			
May	112.1	Six months ago	104.8	May	111.7	Six months ago	109.6
April	109.2	Year ago	103.7	April	111.8	Year ago	109.6



Oilheating Trends

INSTALLATIONS of domestic oilburners and units in May are estimated at 2,285, compared with 436 in May, 1943. Of these 79 per cent were conversion burners, 9 per cent were boiler-burner units and 12 per cent furnace-burner units. Total domestic installations for the first five months were 15,044 against 5,520 last year or an increase of 173 per cent. About 70 per cent of the installations this year were replacements and the remainder new installations.

BURNER PRICES: Retail prices on the May index showed virtually no change from April but the wholesale conversion-burner index was up more than two points. This may reflect either actual price advance or dealers buying more expensive burners, probably the former.

SERVICE INCOME: Service department income of all reporting dealers for May averaged $1,606. This is a pronounced drop from the average of $1,956 in May, 1943 or a decline of 17.9 per cent. This has unfavorable implications since it points to reduced summer service activities as a result of manpower shortages.

BURNER STOCKS: At the close of May dealer stocks of domestic burners and units are estimated at 9,400, an increase of 1,600 over the end of April. This indicates quite a scramble to get hold of burners in view of the obvious severe shortage next season. The publishing of R.F.C. stocks in the May issue of FUELOIL & OIL HEAT was a factor in this stock increase since most of R.F.C.'s conversion burners have been sold in recent weeks. About 70 per cent of dealer stocks are conversion burners, the balance boiler and furnace units. Factory stocks at the end of April, the latest available figures, were 23,123 domestic burners and units. The figure given in the last issue for factory stocks was incomplete and has been revised by the Census Bureau. The correct factory stock figure for the end of March was 23,023. Factory shipments during April were 2,901, indicating that about three thousand domestic burners and units were manufactured during the month.

RENEWAL RATIONS: Of all reporting fueloil distributors 77 per cent say that their local boards had virtually completed mailing out renewal applications by June 10, while 10 per cent of the distributors say that some of their customers had re-

ceived the new coupons by that date. A large majority of distributors have planned active advertising and direct mail campaigns to urge customers to send in their applications promptly and to order a summer fill-up as quickly as they get the coupons—77 per cent so reporting. In a number of large cities the fueloil industry and OPA have established joint advisory panels, although this should be done far more widely than has been done to date. Of all cities heard from, 21 per cent have such panels and 79 per cent do not. Perhaps the industry should take the initiative in recommending to local OPA authorities that these panels be formed this summer.

CONSUMER ADVISORY SERVICE: In the May issue of FUELOIL & OIL HEAT and in the May 30 issue of OPA's *Fueloil Industry Letter* were outlined two methods for keeping customers advised periodically how they stand on their ration consumption. Exactly half of the reporting fueloil distributors say that they have either definitely decided or are giving favorable consideration to starting such a service for next season. Quite a number had used some kind of consumer advisory service last season—15 per cent saying that they had started it last year, although many such plans were not as specific as the proposed new ones. In any event, the increase indicated for next season is remarkable and shows a strong desire on the part of a large segment of the industry to make rationing work better, as well as to gain the merchandising advantages that the added customer goodwill will bring.

SUMMER HOT WATER HARDSHIP: Boards have been instructed this year to issue hardship rations for the summer hot water to all worthy applicants to carry these people through August 31. Last season too many boards refused hot water allowances, telling the applicants to use their new rations for the purpose. This year boards were urged to stop this practice so that the new rations would be intact as of September 1. Of all of the reporting fueloil distributors 19 per cent say that their local boards are still telling consumers to wait until they get their new rations and use that oil for hot water this summer. The other 81 per cent report their boards handling the situation correctly.

HOT WATER RATION FORMULA: At the time the rationing program started, it was recognized by OPA that the hot water formula provided less oil for the purpose than consumers would need, but with the definitely limited total amount of oil available, it was believed better to allow the maximum amount for heating at the expense of hot water. Industry men, however, have repeatedly petitioned OPA to increase the hot water allowance. This month, fueloil distributors and key oil-heating dealers were asked if they favored a change in the basic OPA policy. In other words, when PAW certifies to OPA a specific quantity of fueloil to be distributed by rationing should OPA take more of this for hot water and reduce the heating allowance correspondingly. Only 22 per cent of those answering this question recommend a change in policy, the other 78 per cent say that we should continue to favor heating at the expense of hot water as long as it is necessary to stay within the overall limits of PAW allocations. An indication of the extent by which hot water rations are inadequate is shown by a check of one local board in the New York area. Separating all rations for hot water only, where no heating or other uses were involved, the average cut under the formula from base period consumption was 46 per cent. Since the heating formula was designed for a 33-1/3 per cent cut and actually accomplished about 30 per cent in the same area, the question is whether to remove the excessive 15 per cent cut from hot water by cutting heating a little deeper. Taking an average group of houses, if heating were cut 3 per cent more, or down to an actual 33 per cent reduction, the hot water cut could be brought back up to the same figure or about 33 per cent. This would mean that about one-fourth more would be allowed specifically for hot water.

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
May		5 MONTHS			May		5 MONTHS	
1944	1943	1944	1943		1944	1943	1944	1943
..	..	..	..	Baltimore, Maryland	1	56	1	327
..	..	..	..	Binghamton, New York	0	0	1	0
43	20	136	62	Boston, Massachusetts	0	0	0	11
2	0	27	3	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Detroit, Michigan	185	579	1559	2015
0	2	3	2	Elizabeth, N. J.	0	0	0	40
..	..	..	..	Greenwich, Conn.	1	0	1	2
..	..	..	..	Hackensack, N. J.	0	0	0	0
0	0	2	1	Irvington, N. J.	4	0	4	0
3	0	9	4	Milwaukee, Wisc.	..	..	..	..
10	3	72	34	Minneapolis, Minn.	2	0	2	2
1	2	13	3	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	0	0	0	0
11	2	36	7	Mt. Vernon, New York	..	..	..	..
26	2	67	12	New Bedford, Mass.	..	..	..	..
1	0	3	1	New Haven, Conn.	..	..	..	..
1	0	1	6	New Orleans, La.	..	..	..	..
0	0	1	0	New Rochelle, N. Y.	1	0	1	0
1	0	5	149	Norfolk, Virginia	1	10	1	167
0	0	1	2	Oakland, Calif.	..	..	..	..
5	0	50	13	Omaha, Nebraska	54	0	250	1
2	0	9	0	Paterson, N. J.	0	0	1	0
..	..	..	..	Plainfield, N. J.	0	0	7	6
0	0	11	2	Portland, Maine	1	0	1	11
9	1	51	7	Portland, Oregon	57	95	339	1188
..	..	..	..	Reading, Penna.	0	0	0	0
4	0	15	1	Richmond, Virginia	73	0	73	33
0	0	0	0	Rochester, N. Y.	..	..	..	..
4	1	15	3	Rockville Center, N. Y.	0	0	0	0
0	0	0	0	Salem, Massachusetts	0	0	0	0
8	1	24	6	St. Paul, Minnesota	0	1	0	1
0	3	9	10	Schenectady, N. Y.	..	..	..	..
79	3	788	10	Seattle, Washington	130	115	512	475
..	..	..	..	Springfield, Mass.	0	11	5	63
..	..	..	..	Syracuse, New York	0	0	0	24
..	..	..	..	Trenton, New Jersey	1	56	1	56
..	..	..	..	Utica, New York	0	0	0	0
8	2	45	13	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	0	0	0	0
..	..	..	..	Wilmington, Delaware	8	346	8	400
12	2	47	9	Worcester, Mass.	..	..	..	..
5	3	37	8	Yonkers, New York	..	..	..	..
235	47	1477	368	*Totals*	519	1269	2767	4822
+400.0		+313.3		*Percent Change*	—59.1		—22.2	

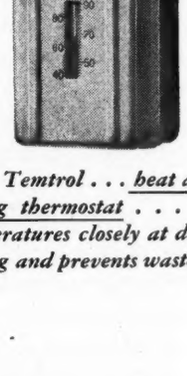
*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

Dealers! Contractors!
Join the Battle Against Fuel Waste

Men of the heating industry—it's up to you! Fuel *must* be, *will* be conserved during this coming heating season. But our country needs your help and needs your leadership. You, and only you, have the knowledge and skill to put the heating plants of the nation in condition to burn fuel efficiently. *Remember that* "Fuel-Saving Starts with Control."

- ★ **Install Draftender controls in hand-fired systems—*to save fuel.***
- ★ **Install limit controls on thermostatically-controlled systems where limit controls are lacking—*to save fuel.***
- **Replace faulty or obsolete controls—*to save fuel.***
- ★ **See that controls are properly adjusted—*to save fuel.***

Do not wait till the heating season is on! Start now and avoid the late summer rush! Order your needed PENN controls from your local wholesaler. *Penn Electric Switch Co., Goshen, Indiana.* Export Division, 13 E. 40th St., New York 16, U. S. A. In Canada: Powerlite Devices, Ltd., Toronto, Ont.



Penn Temtrol . . . heat anticipating thermostat . . . holds temperatures closely at desired setting and prevents waste fuel.

PENN

MEMBER I.C.I. INDOOR CLIMATE INSTITUTE

AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

Postwar Fueloil Cost

Ryan Predicts Strong Supply, Price Down

Addressing Oil-Heat Institute of New England at Boston on May 31, Paul Ryan, petroleum economist, outlined probable postwar economics in the petroleum industry and showed that in the immediate postwar years they point to softer fueloil prices. Because every product that a refinery makes from a barrel of crude has direct bearing upon the cost of the other products, Ryan outlined the apparent demand for aviation and motor gasoline, butadiene and other chemical components to show why fueloil will be favored in volume.

With a lifetime in the oil industry, starting with the wildcat boom days of Eastland, Ranger, Eldorado, etc., Ryan became president of the National Refining Co. before the war. During the war years he has been a member of the Economics Committee of Petroleum Industry War Council, a member of the Navy's Contract Renegotiation Board, Chairman of the Postwar Readjustment Committee of P.I.W.C. and a consultant to the Treasury Department on War Loan drives. The section of his Boston paper of direct interest to fueloil men is here reproduced.

LET US LOOK AT SOME of the post-war economic problems confronting the petroleum industry. More than ever in the post-war period will industry recognize its dependence upon the consumer; the consumer can, and will, "make or break" any company or any industry. The evolution of our economic balance in all industry, and particularly in the oil industry, should properly and wisely start with the consumer. We have proven to our own satisfaction, and to the discomfiture of our enemies, that we in this country can make almost anything in undreamed-of volumes. In the post-war period this experience in production will be most valuable to us, but our greatest problem will be, not to manufacture the goods, but to market them with sufficient profit to enough satisfied consumers as to warrant the continued operation of our production facilities. Let us therefore, start our economic studies of the oil industry with the markets for petroleum products:

(1) Let us look toward the expanding market for aviation gasoline. Before the war approximately 5,000 barrels per day of aviation gasoline were used for all military purposes of this country, and less than 5,000 barrels per day were consumed for all commercial and private flying. Our present production capacity is almost 450,000 barrels of aviation gasoline per day.

Before the war in the United States there were 400 transport planes, each with a maximum 21 passenger capacity; at the present time, the war has left approximately 200 of these planes in commercial transport service. 400 post-war planes of 32 passenger average capacity and increasing by half the number of pre-war trips per plane, could carry one-half of all the Pullman passengers and first-class mail and 5 per cent of the express carried by all the railroads in 1940—and these total planes would consume less than 20,000 barrels per day of aviation gasoline. No realist can reasonably expect that more than one-half of all Pullman passengers, mail, and 5 per cent of the express, transported by all the railroads in 1940, will be transported by airplanes in the immediate post-war period, for that volume would exceed four times 1940's airplane traffic.

If the military services used 10,000 planes and operated them 200 hours per year (which would be many times the number of pre-war planes and twice the usage), the total use of gasoline for military purposes would be less than 50,000 barrels per day.

Before the war there were approxi-

mately 30,000 private pilots in this country, flying in almost 10,000 planes, an average of only 50 hours per year per pilot—the total consumption of aviation gasoline by all private planes was less than 1,500 barrels per day. If the number of post-war private pilots was increased to 100,000, and each pilot flew his pre-war average of 50 hours per year, the total consumption would approximate 5,000 barrels of aviation gasoline per day.

The inventor of the helicopter declares that the present stage of its development is similar to the automobile in 1903—it will take three more years to design a satisfactory engine, and five more years to design a satisfactory commercial type of helicopter. No one familiar with the aviation industry made or believes the statement that in the post-war period "the skies will be filled with millions of helicopters flown by average individual Americans."

In other words, the maximum military and civilian consumption of aviation gasoline which we can reasonably visualize would total between 75,000 and 100,000 barrels per day. This aviation gasoline market is approximately one-fifth of the

capacity of our present wartime producing facilities for aviation gasoline.

(2) The pre-war total registration of automotive passenger cars in use was approximately 29 million; authorities estimate that the total registration will reach a low point of 23 million cars in use in 1945, even if the European war ends in 1944 and the Asiatic war in 1945. Any extension of the wars beyond these dates would further reduce the car registration below 23 million.

Automotive authorities indicate that the production of new cars will perhaps equal 2,000,000 between the close of the European war and the close of the Asiatic war, that in the first full year of operation after the close of the Asiatic War, the production of new passenger cars will not exceed 4,000,000 and that thereafter the peak production of the industry in any post-war year would not equal 6,000,000 cars, because such excess production would periodically leave idle manufacturing capacity in the normal post-war years. This means that these projected volumes of production will not allow post-war registration of cars in use to equal the pre-war total registration of 29,000,000 until the end of the year 1948—4 years after the close of the European war and 3 years after the close of the Asiatic war.

Petroleum economists estimate that the consumption of automotive gasoline, therefore, will rise slowly from a 1946 consumption of 574 million barrels, which is 10 per cent below the pre-war level, to a 1950 consumption of 693 million barrels, which is approximately 10 per cent above the pre-war level.

No "Dream Cars"

The cars made for the first several years in the immediate post-war period will be substantially the 1942 models with some slight changes. These cars would require a motor fuel of only a few octane numbers higher than the pre-war fuel—in no case will there by any "dream cars" using "aviation gasoline," and "getting 50 miles per gallon on 100 octane gasoline." The present aviation gasoline, having the normal content of tetraethyl lead in automotive gasoline, would have an octane number of 91. Any development of automotive engines beyond the present range would be, as one automotive top executive phrased it over a year ago, "evolutionary and not revolutionary."

(3) During the war, the oil industry has provided supplies of petroleum products for conversion into synthetic rubber, plastics, chemicals, and many other compounds for various industries. Petroleum refineries, in the post-war period, will undoubtedly become sources of supply of compounds for the chemical industry. 18 years ago some of us started using petroleum products as bases for synthetic chemical compounds; the present has further accelerated that development, as wars always accelerate the development of most scientific processes.

The possible profits on the sale of petroleum products for such chemical compounds are high per gallon, although the present gallonage is small, compared to the huge production of normal petroleum products. 1/2 of 1 per cent of the refineries' throughput could supply all synthetic rubber needed to equal the peak pre-war consumption of rubber in any one year, 650,000 tons; 1/3 of 1 per cent could supply all the plastics, over 400,000 tons in the best pre-war year; other small percentages could supply other complete industries. The vast size and efficiency of the petroleum industry, and the fact that the leading refineries will operate to make increased volumes of raw materials for these synthetic chemical compounds, provide great encouragement to other industries in the post-war period.

(4) Prior to the war, the total annual consumption of distillate fuel oil for oil burners had increased steadily each year to a peak of 121,000,000 barrels. Similarly, annual sales of kerosene for fuel purposes in oil burners and space heaters had exceeded 60,000,000 barrels.

Recent data indicate the usage of 2,386,000 home-heating oil burners, 1,866,000 space heaters, and 293,000 commercial and apartment heating systems.* Present indications are that reconversions from other fuels to oil will be immediate and numerous in the post-war period, and that conversions, replacements of old heating oil units, and sales of new units in newly constructed residences, will exceed 400,000 oil burners per year for several years in the immediate post-war period. Similarly, sales of space heaters are estimated to exceed 750,000 units per year for several years. Such increased users would increase sales of fuel by approximately 15,000,000 barrels per year and would increase sales of kerosene by 7,500,000 barrels per year.

Differing from aviation gasoline which will suffer a severe peacetime reduction, differing from automotive gasoline which will lack adequate numbers of passenger cars, differing from the markets for chemical compounds which are negligible vol-

(*Continued on page 78*)

*FUELOIL & OIL HEAT, January, 1943.

Ask More Replacement Burners

Industry Seeks 130,200 Units as Stocks Decline

MEMBERS OF THE Oil Burner Industry Advisory Committee asked the War Production Board to ease the provisions of Limitation Order L-74 to permit the manufacture of 130,209 Class B (domestic) oilburners before the end of 1945. The request was made in a report of the Task Committee submitted at a meeting with WPB officials at Washington, June 14, on the plea that "present stocks of Class B oilburners now are far below minimum working levels."

This report has been accepted by WPB, and it is understood that a request for necessary materials has been made. The program, if allowed, would permit small scale manufacture of domestic burners to start in the last quarter of this year, and to continue throughout 1945. No request has been made for burners for new work or for conversions from other fuels. It contemplates making only the necessary number of burners to meet the necessary replacement demand, and characterizes this demand as urgent. The industry believes it can make the burners requested without interference with war work.

"At no time in the history of the industry has annual production and sales of Class B oilburners been more than a small fraction of the productive capacity of the manufacturers engaged," the industry reports. "It is estimated that the industry could have produced well over 2,000,000 oilburners a year in any of the last ten years when the average production was slightly more than 233,000 units a year."

Present field manpower available—so acute as to have put oilburner service men on the "Critical" list—makes it imperative that troublesome burners be replaced to reduce emergency service, the report points out.

"The average oil burner service man at the end of 1943 had 461 oil burners under his care, compared with an average of 244 burners per man in 1941. With manpower so short, it is apparent that an increase of a fraction of a call per burner per year represents a tremendous burden which the industry has been able to absorb from this older equipment only at the expense of spending less time on keeping burners operating at peak efficiency, and more time on answering emergency 'No Heat' calls. To partially relieve this tight manpower situation, it is essential that the older and more troublesome oil burners be replaced."

TABLE 1

Year	Total Sales	New Homes	Conversions	Actual replacements	Necessary replacements	Backlog
1935	150,510	9,660	107,019	33,831	...	...
1936	220,075	17,890	159,531	42,654	...	...
1937	210,740	25,480	136,957	48,303	...	....
1938	179,360	23,600	108,003	47,757	...	...
1939	236,140	27,410	153,213	55.517	...	...
1940	302.210	37.010	201,240	63,960	...	...
1941	333,250	50,980	228,901	53,369	...	...
1942	99,514	...	66,270	33,244	49,341	16,097
1943	33,445	...	19,535	13,910	49,341	35,431
1944	...	...	...	20,000*	49,341	29,341
1945	...	...	...	...	49,341	...
	1,765,244	192,030	1,180,669	392,545	...	80,869
Average (1935 to 1941)	233,184	27,433	156,409	49,341	...	...

*Estimated

Domestic Stocks

Stocks of oilburners and oilfired units in manufacturer and dealer inventories when manufacturing was stopped in 1942 totalled 86,000, which had decreased to less than 26,000 by March 31, 1944, not all of which are usable for replacements due to their types, sizes and other characteristics. On this subject the report says:

"Of the manufacturers' inventories, only 2,946 were conversion oil burners, and 13,835 were boiler or furnace units, an undetermined number of which were reported as oil burner units in spite of the fact that they are not equipped with burners or capable of being used in their present state. It is probable that about half the existing manufacturers' inventories are usable oil fired boiler or furnace units.

"Of the 2,384,455 domestic oil burners operating at the first of 1944, only 9.6% are being fired at rates higher than 2 gallons per hour. There are no data available of the firing rates of Class B oil burners used for commercial heating. Stocks of Class B burners designed for larger firing rates are generally not acceptable for the average residential replacement.

"Due to different methods of installation required for different types of Class B burners, not all are interchangeable in a particular installation. Though high pressure and low pressure generally can be used interchangeably, vaporizing and rotary equipment would require an entire reinstallation to make possible their use in place of either type of pressure burner. This is an expensive and time-consuming operation.

"Recent field experience indicates an alarming shortage of the type of equipment most in demand for replacement purposes—the conversion gun-type oil burner designed to burn 2 gallons per hour, using 110 volt, 60 cycle current. It seems doubtful if 25% of the presently reported Class B oil burner stocks will fit those specifications.

"A survey of fourteen field offices of the Reconstruction Finance Corporation now holding Class B oilburners showed that on April 15, 1944, these offices had 2,230 burners and units. Of this total only 567, or 25.4% were conversion burners, and only 282, or 12.6%, were pressure burners capable of firing 2 gallons per hour or less. These stocks only recently have been put on the market, and have not been depleted of the most popular fraction to the extent that the less restricted manufacturer and dealer stocks

have been. It is estimated that not more than 7,000 Class B conversion burners of the gun type are available for the average residential replacement, or less than required for two months' normal replacement. This limited stock, already critical due to inequities of distribution, will be completely exhausted well before the start of the fourth quarter of 1944."

Essential Requirements

"In the period from 1935 to 1941 inclusive, the industry sold an average of 233,184 oilburners and oilfired units per year. Under restrictions on burner manufacture and sales the total dropped to 33,345 in 1943, of which 17,415 or 52.1% were taken by Government.

"Burners required for replacements during the seven-year normal period from 1935 to 1941 averaged 49,341 per year. This volume had shrunk to 13,910 in 1943, or only 28.2% of the average for normal years. Figures on annual sales, installations and replacements during the period since 1935 are shown in Table 1.

"Though no check can be made on the age of the burners replaced each year, it is reliably estimated by industy that a minimum of 400,000 burners now are 10 years old or more, and may become in need of replacement at any time. This increasing average age tends to increase the *rate* of needed replacements. For this reason, we believe that the backlog figure of 80,869 at the end of the third quarter of 1944 is extremely conservative.

"In the first quarter of 1944, after replacement was allowed without specific permission of the War Production Board, there were 11,647 replacement burners installed. Normally, this quarter accounts for only 13.2% of the annual oil burner sales, indicating a total demand for 88,235 replacement burners for the calendar year 1944, or 62,559 burners in the first three quarters, which represent 70.9% of the annual demand. This indicates an active demand for the backlog of 80,869 burners estimated in Table 1. The difference in the estimates is inconsequential.

"There is every reason to believe the demand is much greater than present figures indicate, since the record of actual sales by months runs counter to the seasonal pattern. There were 6,624 replacements made in January; 3,896 in February; and 1,127 in March this year. We have taken the total for the first quarter as indicative of the 1944 demand, but the difficulty of finding usable burners, due to the maladjustment of distribution, has consistently cut the actual monthly sales instead of allowing them to increase seasonally according to the normal pattern.

"Assuming that there were as many of the 20,000 usable Class B oil burners and units in both manufacturer and dealer stocks (an assumption that is extremely doubtful) the indicated demand, if all stocks could be located and used, would entirely deplete the present inventory before the middle of July. Figures on monthly percentage of sales, indicated demand, and depletion of stocks are given in Table 2. The acute shortage of Class B burners being experienced in the field at present precludes the possibility that 20,000 usable burners can be located and distributed in so short a time. Dealers already are finding it impossible to locate needed burners for replacements. It is believed barely possible that 20,000 burners and units can be used out of present stocks during the entire year.

"Normal stocks of Class B oilburners and units held by manufacturers in 1941 averaged 26,950 per month, of which 20,240 were conversion burners, 3,170 were boiler units and 3,540 were furnace units. As of March 31, 1942, manufacturer stocks were 32,407, and dealer stocks were 53,706 burners and units, a total inventory at the start of the present war period of 86,113. Manufacturers held only 37.6% of the total. If we assume this percentage to be typical, the normal monthly inventory in 1941 would have been 71,675 burners and units, of

(*Continued on page 75*)

TABLE 2

	% of Sales	Indicated 1944 Demand	Actual 1944 Replacements	Assumed Usable Inventory
January	4.3	3,794	6,624	...
February	3.6	3,177	3,896	...
March	5.3	4,676	1,127	20,000
April	6.5	5,735	...	14,265
May	6.7	5,912	...	8,353
June	7.1	6,265	...	2,088
July	8.7	7,676	...	— 5,588
August	11.5	10,147	...	—15,735
September	17.2	15,176	...	—30,911
October	16.2	14,294	...	—45,205
November	8.0	7,059	...	—52,264
December	4.9	4,324	...	—56,588
	100.0	88,235	20,000*	56,588†

*Estimated. †Deficit.

WPB Lists Oilburner Shortage "Most Serious"

CHAIRMAN DONALD M. NELSON of the War Production Board released a list of consumer goods on June 21, showing products for which preferences in the allocation of materials will be granted as resumption of civilian production gets under way. Domestic oilburners are shown in the list of "Most Serious Shortages." Also in this list are domestic size stokers, oilfired floor furnaces, domestic oil storage tanks, portable oil stoves and oil ranges.

Products listed among those of "Serious Shortages" (Table II) include cast iron boilers, cast iron radiation, oil cook stoves, oil table stoves, fueloil stoves other than portable, warm air distribution equipment, warm air furnaces, Class A (Commercial stokers), and indirect water heaters.

Necessary production of these items by quarters is broken down on three levels. Level 1 represents the absolute minimum production for essential replacements, or in the case of Class B (domestic) oilburners, 12,335 units per quarter. Domestic burners at Level 2 are put at 30,042 units per quarter, representing normal requirements for replacement, conversions and reconversions. The unrestricted Level 3 requirements (exclusive of burners normally going into new buildings) would allow 69,145 burners to be produced each quarter.

No allocations of materials have been made for domestic oilburner production in the third quarter this year. Consideration now is being given to a program of burner production for the fourth quarter, but no decision had been reached as to the Level or quantity of domestic oilburners to be produced.

More Heat per Gallon

Remedies include: (a) ending poor circulation (b) lowering stack losses

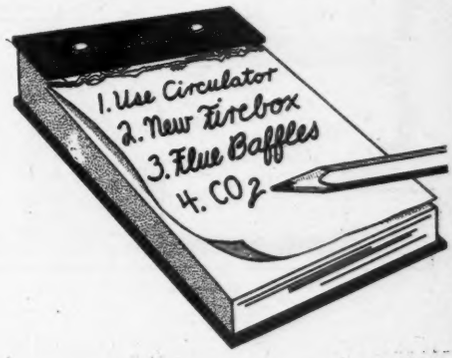
By
J. W. Schulz

"THE REASON we called for technical help," explained an oil dealer as we drove to a trouble job, "is that we aim to use precise technique, and not pot-shots, in locating and remedying the faults that waste oil. We are determined to make the building comfortable on the amount of oil we can get for it. You see, the place was once a residence with about 16 rooms. Now it's sort of an institution. Most of the occupants are old and unwell. Ordinarily, something like 7,000 gallons of oil were used a year just for heating. Another fuel is used for heating water. Fueloil rationing did a job on us to begin with, but we managed to get some extra oil. Even then, for the first year of rationing the occupants of this building nearly froze to death."

I had heard first of the installation by mail, in September, 1943. After an exchange of correspondence with the oil supplier, which gave me many facts beforehand, I visited the place. There was a challenge in the thing. The objective was not only to eliminate gross defects in a burner installation six years' old and a heating plant about 15 years' old; in addition, the oil ration was to be stretched further than it goes in a modern system designed entirely for oil.

The load on the boiler was 2,040 sq. ft. of standing hot water radiation, a survey showed. The radiators were of good size for the rooms. Heat loss check-ups of typical rooms, made to help us arrive at an opinion regarding the ability of the heating system itself, showed that the radiation was figured on a basis of 150 Btu per sq. ft. of radiation per hour, and that a boiler temperature of 170° or 180° should do for a zero day.

After the oil dealer and I had operated the burner for two or three hours and felt every radiator in the building a half a dozen times, he summed up the defects which were related to shortcomings in the gravity circulation hot water system for distributing the heat: "On mildly cold days, the radiators fed by one hot water main get no heat at all, though they heat well during severely cold weather when steady burner operation holds the boiler temperature at about 200°. And for the other radiators—well, though the rooms seem properly heated when enough oil is burned, the radiator temperatures are considerably different."

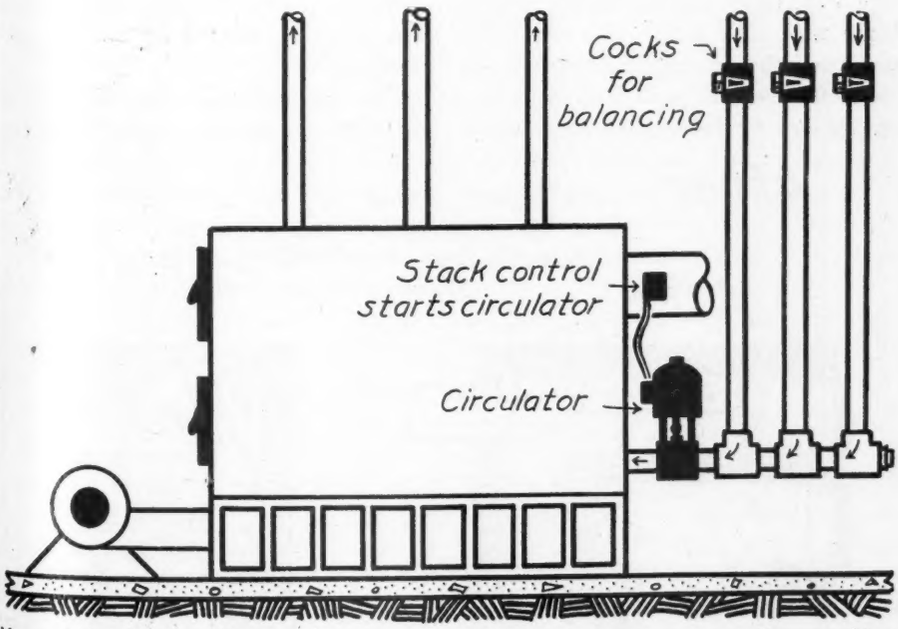


"The circulation of water is very poor," I commented, "and if you really want to take the big bugs out of the plant, better start by providing smooth, speedy highways for the heat to travel from the boiler to the radiators. Get hold of a circulator, new, used, or salvaged from a junk pile and reconditioned. I bet every gallon of oil burned will give 20% more heat after you convert this old-style gravity circulation system to a modern, balanced forced-circulation system."

As my letters had indicated a switch to forced circulation may be in order, the fuel oil dealer was more than half prepared. He was able to make these improvements within two weeks:

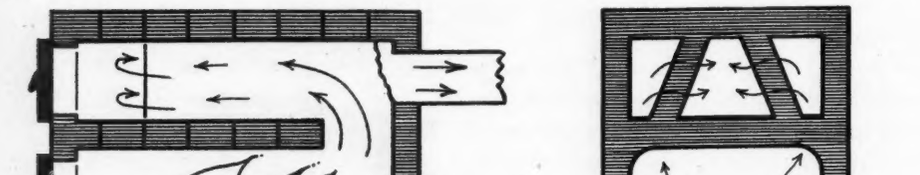
A. He installed a circulator in the way the accompanying sketch shows. B. He provided three square-head cocks in the three return lines to permit balancing the heat for the different parts of the building. C. He installed orifices in the feed valves of all the radiators.

The orifices were important. Obtained from a heating specialty manufacturer, they were of sizes to match the radiator sizes. Working against a proper set of orifices, a circulator builds up the proper pressure in the supply mains and risers, and causes the proper amount of water to "jet" into each radiator. In addition,



Unusual hook-up *in which the thermostat controls the burner, and the circulator starts as soon as the stack is up to temperature.*

Before - 31 gals. oil per day - 4.5 gph
5.4% CO_2, 900° stack temp.
Firebox Data - 20" wide, 33" long
6" nozzle height, 14" sides



Side View

Front View

on this job the orifices provided a positive means for increasing or decreasing the effectiveness of any radiator. After tests had been made, six radiators were fitted with smaller orifices to cut room temperatures and save oil; three large radiators were fitted with higher capacity orifices to favor the heating of certain important rooms. The thermostat was located in one of these rooms.

An unusual method was used to control the circulator because the technical-minded oil dealer was pleased at the idea of having the oilburner start from the room thermostat and having the circulator start about five minutes later, when the boiler had a chance to receive heat from the flame. A flue gas temperature control was installed in the smokepipe, as the drawing shows, and was simply connected in the live leg to the circulator motor. The control has a 110-volt 10-ampere switch which closes when the smokepipe temperature rises to, say, 300° or 500° depending on how the control is adjusted. To obtain a time lag which would start the circulator a few minutes after the oilburner, an ordinary pipe nipple, capped on one end, was fitted over the control's sensitive element which extends into the smokepipe. As the control is adjusted to a low temperature and operates on a wide differential, on mildly cold days it starts the circulator three to five minutes after the burner starts, and keeps the circulator running for about ten minutes after the burner stops. For colder and colder weather, the circulator is more eager to start promptly, and more reluctant to stop. On coldest days, it operates nearly continuously.

The oil company's records showed that during the first season of fuel oil rationing, and despite efforts to save oil by lowering the setting of the thermostat to 68° from 75°, 31 gallons of oil were used on a day when the mean outside temperature was 35°. Though the fueloil dealer did not obtain accurate data on this, one month after the plant had been converted to forced circulation and balanced he reported that he was entirely satisfied with the results. The promised 20% more heat from each gallon of oil was being realized, he said.

Clearly the time had come to go ahead with other improvements, long planned, related to combustion quality and absorption of heat by the boiler.

The accompanying "Before" drawing shows the boiler and the firebox used to begin with. The firebox was not of the wrong width and length for the 4.5 gph nozzle we found in the burner, but it was too shallow for best combustion. And it was built of old-style, heavy-weight firebrick. Clearly, a modern combustion chamber was needed. As the accompanying table shows, the CO_2 with a trace of smoke was 5.4% for the first test. I knew that when well-tuned and helped by an excellent combustion chamber the particular burner model could give at least 10% CO_2.

The combination of the first test report and a study of the boiler design amounted to an engraved invitation to go after the stack temperature with an axe.

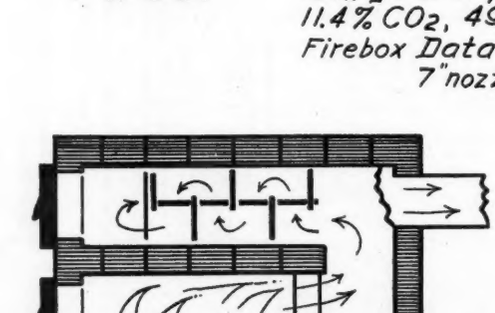
"How good is the chimney draft," I asked my companion. "We have .04" draft in the firebox and the same draft at the smokehood, with the draft reduced by this swinging disc type draft regulator. Now, how much draft can the chimney really provide—dependably? I have in mind putting zig-zaggers or heat rakes in the flues of the boiler to cut the 900° stack temperature, but the success of baffles depends on the chimney draft."

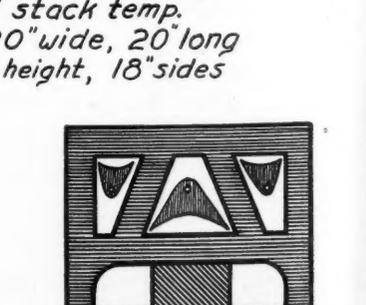
Immediately after testing the burner as we found it, we checked on the chimney draft by reading it with the burner running and the draft regulator tied shut. Read through use of an opening in the smokepipe about four inches from the chimney, it turned out to be only .10".

"Too low on the chimney draft," I complained, "considering the size of the job, the height of the chimney, and the high stack temperature. We must have more draft if we are to make best use of flue baffles. Suppose you have your men clean the chimney of birds' nests or whatever is in it, and install a new, tight smokepipe."

The data given for "Second Test," in the table, show the results. Next, we

After - 19½ gals. oil per day - 3.5 gph
11.4% CO_2, 490° stack temp.
Firebox Data - 20" wide, 20" long
7" nozzle height, 18" sides

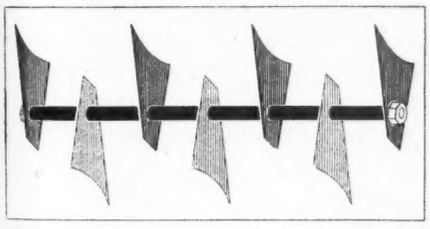




tested again with the draft regulator tied shut. This time we obtained a maximum chimney draft reading of .18", instead of .10".

Details of the new firebox, planned next as the way to higher CO_2 readings and cleaner burning, are shown in the drawing labelled "After." The box was designed for 3.5 gph because with the increase in the heating plant efficiency, given by the balanced forced-circulation, and with improvements in the CO_2 and stack temperature, 3.5 gph certainly would do the work done previously by the old firing rate of 4.5 gph.

Then, too, I aimed to have the burner run many, not few, hours on the coldest days. During the 1942-43 heating season, according to our data from the oil company's records, about 60 gallons of oil had been used per 24 hours of the coldest weather. If the improvements cut this to 45 gallons and we fired 3.5 gph, the burner would operate only about 13 hours on a zero day. From the angle of using the boiler efficiently and of running fuel costs lower than would be had with hand-fired coal, it would not be good to keep the burner idle even 11 hours on a zero day



Detail of the construction of the heat-rake baffle.

and make up for this with hard-firing the rest of the time. A coal fire in the boiler would be burning more or less steadily throughout the 24 hours and would as a result yield appreciably lower stack temperatures. Actually, this boiler should fire efficiently at 3.5 gph when properly adapted to oil, I figured, for it had about 8.5 sq. ft. of grate area; fired by coal, it would be efficient for about 1,800 sq. ft. of radiation, compared to the 2,040 sq. ft. connected to it on this installation.

The new firebox would be built, of course, of modern light-weight refractory material that heats quickly and saves oil over the use of the old-style heavy firebrick we were replacing.

The second back wall, behind the regular back wall of the firebox and shown in the "After" drawing, was installed to arrive at higher combustion space temperatures than would come without it. These would, in turn, give higher flame temperatures and higher temperatures for the direct heating surfaces over the flame. With the auxiliary wall there would be higher CO_2 with no smoke, and less soot in the flues of the boiler. The last point was especially important because we were looking forward to installing flue baffles for low stack temperatures. Boilers which give low stack temperatures tend to collect more soot in the flues than other boilers.

I instructed the men to make the openings in the auxiliary wall 60% of the area of the openings in the crownsheet of the boiler and leading upward to the flue passages. One additional point was made regarding this wall. Built of high-grade light-weight firebrick, it would heat quickly after the burner started, and its use with the particular burner would offset the tendencies for the flame to have smokey, cool tips sweeping over the center of the back wall of the regular firebox.

As the table shows, the third test reported a reduction in the stack loss from the original 47% of the heat in the oil to 25%. To sum up fully, at this point, the reduction in the flue gas loss was the result of:

1. Firing 3.5 gph instead of 4.5.
2. Using a firebox which is short and deep, and which is engineered of modern light-weight refractory material.
3. Using an auxiliary refractory wall behind the firebox to arrive at higher temperatures for the flame and the direct heating surfaces over the fire.
4. Carefully located and sealing air leaks in the boiler.
5. Adjusting the draft regulator for .04" firebox draft instead of the .07" which resulted (see Second Test) from cleaning the chimney and installing a new smokepipe.
6. Installing a high-grade new nozzle in the burner, checking on the positions of the nozzle and air-handling devices in the gun tube, and carefully adjusting the oil pressure and the air damper on the burner.

In travelling our chartered course toward maximum efficiencies, we had arrived at the point where concentrated attention on the stack temperature was needed.

Generally, when on jobs of this type, I keep an axe handy. It is needed to chop down the stack temperature. But it is needed more, in some cities, to use in going after burner mechanics who, on the first mention of using flue baffles, start to tuck split firebrick into the boiler flues. This oil dealer proved to be well in-

(Continued on page 73)

FACTS GIVEN BY COMBUSTION TESTING INSTRUMENTS

	gph rate	CO_2	Stack Temp.	Firebox Draft	Smokehood Draft	Stack Loss
First Test as burner was found	4.5	5.4%	900°	.04"	.04"	47%
Second Test chimney cleaned	4.5	5.0%	900°	.07"	.07"	49%
Third Test new firebox	3.5	11.5%	820°	.04"	.04"	25%
Fourth Test heat rakes added	3.5	12.0%	480°	.02"	.08"	16%
Fifth Test final adjustments	3.5	11.4%	490°	.02"	.09"	17%

With all adjustments except those for the fifth test, the chimney gave a trace of smoke. To play safe against sooting and smoking in the future, the final adjustments were for a clear stack.

To test the chimney, at the end of the first test the draft regulator was tied shut and draft readings were taken. The maximum chimney draft was .10". Then the chimney was cleaned and the smokepipe replaced, and the second test was made with no changes of the burner or draft regulator adjustments. The maximum chimney draft then obtainable, following the second test and with the burner running and the draft regulator tied in its maximum draft position, was .18". Notice that after the heat rakes were installed a firebox draft of .02" could be maintained by adjusting for .08" to .09" smokehood draft, and bear in mind that the chimney can give much higher smokehood draft than .09".

Dealers Fight Over-Charges As Parts Sales Continue Up

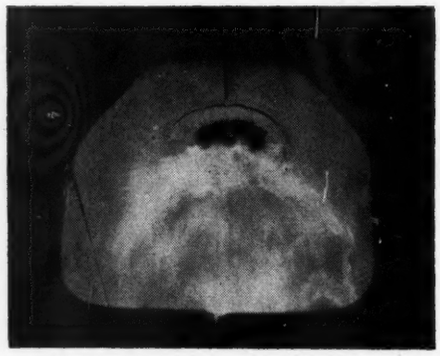
TIGHT SERVICE manpower situations in most sections of the country have created major problems at many levels of the industry, and the impact of this condition has changed the thinking of most service managers. With labor scarce, managers are becoming more and more conscious of equipment sales as a source of income, better burner efficiency, and a means of decreasing emergency service calls. This desire to sell parts and accessories has not all been for the best. It has created minor rackets in some areas that are disturbing to the more conscientious dealers and service managers who see loss of customer good will as a result of unnecessary replacements and excessive charges.

Last year parts and accessories sold by dealers and service companies at retail amounted to an estimated $4,000,000, or something less than a quarter of total service income. It is expected to be substantially higher this year, though an undetermined fraction will represent "racket" sales or unnecessary parts replacements. Stories are current in almost every market of good motors being replaced for $60, and the replacement of pump units with plugged strainers bringing $35 to $50; the removed part to be resold to the next victim at whatever the traffic will bear. This type of racketeering, though it may not be nearly so common as individual reports indicate, is the type of thing that is keeping the better dealers awake nights.

Legitimate modernization and repair of heating plants already has saved large quantities of fuel with profit to the country, the customer and the dealer. The need for continuing this work was recognized by the War Production Board when late in May it approved a program requiring 1,883 tons of materials to make fifteen types of heat control and regulating equipment in the third quarter this year. Dealers will be encouraged to sell and install this control equipment for the benefit it will bring to customers and the relief it will afford the short fuel supply.

Since nearly all material now is sold by service men, it makes possible a source of revenue for these men that helps to keep them interested in staying in the industry during the emergency. Dealers recently interviewed report commission arrangements from 8% to 15% of the sale, though 10% is the most common commission. The commission generally is paid only on the accessories sold by the men, with no commission being allowed on parts.

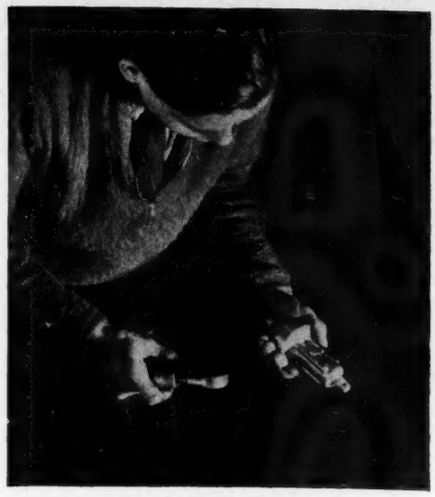
One eastern dealer summed up the feeling of most conscientious retailers when he explained his commission policy: "We don't pay the men for burner parts they use because we do not want to encourage them to replace any but the parts worn or damaged beyond further use. It is too



New Combustion Chambers

easy for a service man to include parts in his work, and the customer has no way to check the necessity for the change. Further, a necessary part replacement is not a sale created by the service man, but a sale that happens to fall to him by the accident of his assignment to that particular job. We pay only for accessory sales he creates, or for major repairs to the installation which he sells to the customer. In the case of such major repairs as reinstallations, and burner replacements, the service manager or I always check the job to be sure it is needed. We don't have the manpower to waste on 'made' work."

A middlewestern dealer tells of firing a service man who charged a customer $5 for a replacement nozzle. As though to defend himself against any charge of over-righteousness, he hastened to explain: "It isn't that we are running a



New Air Valves

Sunday School here, but that over-charging is simply poor business. We get $2 for a new nozzle and the man knew it. That is plenty without taking advantage of our customers. Further, the return of the overcharge was plain, good business. It will come back to us many times in legitimate service charges.

"But the real reason I fired the man, in spite of the fact we couldn't afford to lose a service man, was that I was afraid of him. If he would steal from a customer, he'd steal from the company, and I don't have time enough to run around checking-up on a man I know is dishonest. Any man who will steal, or continue to work for a company that steals, isn't to be trusted with the stock, tools, service trucks, and cash to which our men have access."

Dealer Profits

Another dealer is continuing a policy that netted $2500 in profits last year and provided more than $400 in extra revenue for service men. This dealer, too, pays only for accessories and work sold by the servicemen, and not on burner parts that need to be replaced. The men file complete reports after each service job, showing the condition of the installation and the extra work that should be done to put the installation in first-class condition. They are encouraged to sell the owner fuel-saving accessories and repair work that will improve the operation of his system. When they register the fact on their service reports that they have started the sale of a particular job or piece of equipment, they are protected on the sale, even though the actual sale may later be made by the dealer or the service man-

Do ads like these help Timken Dealers?

A marine in the South Pacific writes, "I like your Victory Home. I want to build a home like it after the war. Put my reservation in now for Timken heating equipment."

A garden club cast a vote of thanks for Cameron Clark's timely suggestion of a garden-hobby room.

The nation's leading financial houses, banks, mortgage companies, have expressed keen interest in the progress of this program. Many have requested literature to send out to their customers. Several have installed lobby displays featuring Timken Silent Automatic homes and heating equipment.

More than 49,000 people sent in for a free booklet containing a description of the Suburban Home shown at upper left—proof in itself that this type of advertising stimulates thinking, recreates interest in new homes!

Of course we do not attempt to furnish plans and specifications. To those who request them, we advise, "see a local architect or builder for plans and specifications to meet your individual requirements. **Consult a Timken Silent Automatic dealer** for better heating at lower total costs."

Thus, your business, as a Timken Silent Automatic dealer, is tied right in with one of the most effective advertising programs currently appearing in the national magazines and newspapers. More than 200,000 letters, personal calls and coupons have come to us in the last several months as a result of the forceful, far-sighted messages carried in Timken Silent Automatic advertising. No other manufacturer in the heating industry can produce such evidence of success.

But this is not all! Timken is laying the groundwork now so that the Timken franchise in the postwar era will be more profitable than ever.

Sales techniques are being studied and improved, new sales promotion ideas are being developed and perfected. Plans are already under way to give greater factory co-operation in the field, and shortly after Victory, we'll be ready with new and improved heating and air conditioning equipment and other new products for the home market.

Now, if you are not a Timken dealer and want to turn to Timken for more profits, we suggest you correspond with us at an early date.

TIMKEN

Silent Automatic

Quality Home Appliances—
for Comfort, Convenience and Economy

Division of THE TIMKEN-DETROIT AXLE CO., Detroit 32, Michigan

ager. About 70% of the improvements reported by the servicemen last year were sold.

This company last year sold 26 barometric draft controls at an average installed price of $15. Besides the servicemen's commission of $1.50, the controls cost an average of $2.25 each, and average installation cost was $4.50. The dealer netted $6.75 on each sale, but the installations showed an average saving of 8% in fuel consumption, which allowed the draft regulator to pay for itself in the first year of operation.

Other Savings

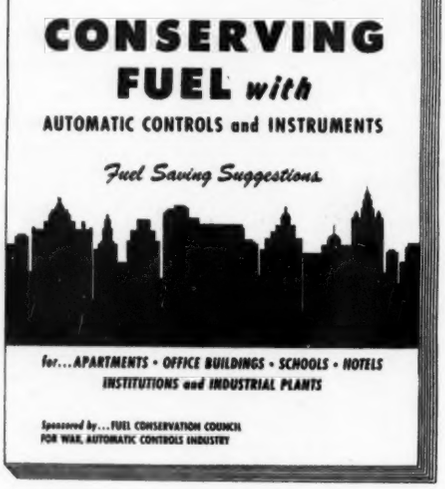
Re-installation work sold 68 precast fireboxes and combustion baffles at an average of $43 per job. Materials cost $14 and labor averaged $7. The serviceman got $4.30 and the dealer netted $17.70 from each job, but savings with a proper, insulated combustion chamber ranged from 11% to 26%, or almost enough to pay for the work in the first season. In addition, there were 14 combustion baffle sales for which the customers paid $11 each. Besides the serviceman's $1.10 commission, the baffles cost $5.25 each, and the labor added another $1.30 to the dealer's cost. Fuel savings averaged 4.5%. The company also sold 400 air filters at a net profit of 75 cents each, on the recommendation to customers that they should change filters at least once a year and realize a saving in decorating.

Dealers and service organizations last year sold 60,144 thermostats, of which 11,160 were clock type; 35,976 primary controls; and 51,888 limit controls. It is expected the totals for this year will be at least as great, and most estimates put the 1944 volume much higher. In addition, last year's sales included 22,560 combustion chambers; 13,708 combustion baffles; 94,944 draft regulators; 58,560 oil filters; 408,048 air filters; and 11,496 humidifiers out of all the possible items available for sale. Shortages in some lines have slowed replacements this year, but fall sales may make up the deficit.

Accessory sales offer a proper and legitimate source of additional service revenue, though every effort must be made to educate customers to the dangers of dealing with irresponsible service organizations that may prey on their unfamiliarity with the burner and its necessary parts.

WPB Authorizes Large Volume of Controls for Fuel Saving

COINCIDENT with the announcement by the War Production Board that material has been released for the manufacture of a large volume of heat controls, the Fuel Conservation Council for War, composed of control manufacturers, has announced a fuel conservation manual for free distribution. The book is the result of cooperative effort of the manufacturers who compose the council, and indicates the purpose and application of the various types of controls in relation to the national fuel conservation drive just ahead.



The text is non-promotional and treats the subject from the educational and practical approach. It is aimed at the commercial field, rather than the domestic heating business.

As part of the Fuel Conservation Program for the 1944-45 heating season, the War Production Board has announced controlled materials have been made available for production of heating system controls for use in some 950,000 residential, commercial, institutional and industrial heating plants. Installers of the equipment will be able to purchase the controls freely.

In allocating the necessary material for production of these controls, it was WPB's aim to make fuel saving devices available in view of the expected fuel shortage during the coming heating season, officials said.

The control equipment for private dwellings proposed under this program consists of thermostatic regulator sets for coal hand-fired heating equipment, limit controls for installation on coal, oil or gas fired equipment already provided with some thermostatic control, and barometric dampers for use with oil and stoker-fired units. Each thermostatic regulator set consists of three instruments—thermostat, high limit control, and an electric damper operator.

For commercial, institutional, and industrial buildings such as schools, hotels, apartments and small factories, three types of control systems are included in the program.

1. An indoor-outdoor thermostat (a controlling device that governs the flow of heat to a structure and is affected primarily by outside weather conditions) with the necessary accessories for direct control of heat generation.

2. A system consisting of an indoor or an indoor-outdoor thermostat and an electrically actuated operator.

3. Zone control sets for use on large buildings where sectionalized or zone control is necessary because of the varying heat losses of the several areas of the structures.

The approved program calls for production during the third and fourth

	Third Quarter	*Fourth Quarter*
Limit Controls	23,700	18,000
Barometric Regulators	200 000	80,000
Thermostatic Regulator Sets	175,000	127,000
Indoor-Outdoor Thermostats	11,228	6,747
Indoor Thermostats	3,583	2,154
Operators	1,433	862
Valves (Electric)	2,866	1,723
Valves (Pneumatic)	2,389	1,435
Commercial Barometrics	12,500	7,000
Pressure Controller and Light Duty Operator Sets	5,000	2,800
Pressure Controller and Heavy Duty Operator Sets	5,000	2,800
Over-Fire Draft Controller and Heavy-Duty Operator Sets	5,000	2,800
Pumps	1,000	1,000
Steam Accessories	25,000	25,000
Hot Water Accessories	25,000	25,000

MONCRIEF

A PIONEER IN THE FIELD

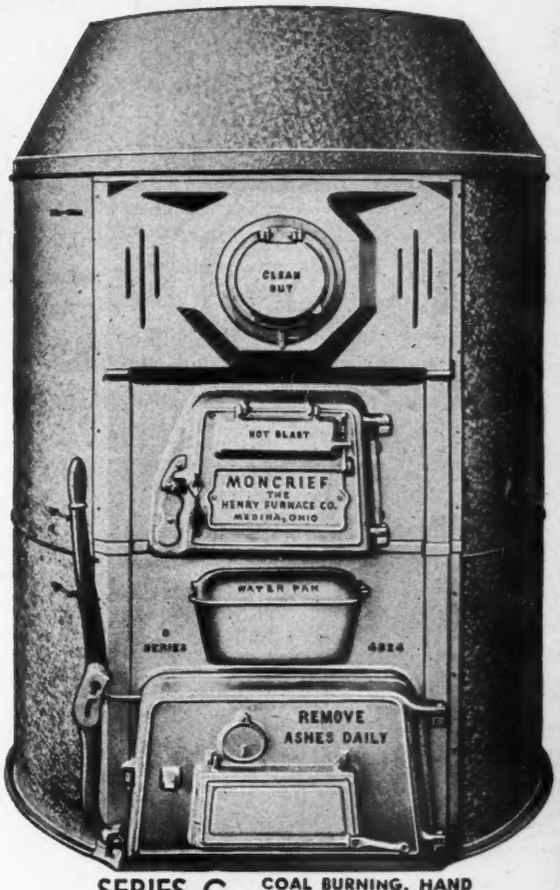
TODAY- Still a Top-Notcher

A pioneer since the horse-and-buggy days, MONCRIEF'S leadership of almost 50 years in the warm air heating field never has been successfully challenged.

Today with those 50 years of "Know How" Moncrief products are still top-notchers in their field. Moncrief products are of proven design and sound construction.

Moncrief, today, as always, offers the biggest dollar value possible in heating equipment, pipe and fittings.

It is our determination that MONCRIEF the Pioneer shall always be a TOP-NOTCHER in the field of warm air heating equipment.



SERIES C—COAL BURNING, HAND FIRED FURNACE

WARM AIR FURNACES

FURNACE PIPE and FITTINGS

MONCRIEF
SINCE 1895

AIR CONDITIONING SYSTEMS

FOR COAL...GAS...OIL

THE HENRY FURNACE CO. **MEDINA, OHIO**

fuel oil & oil heat

quarter of 1944 of the products in the quantities listed in the table.

The controls which will be made available under this program are intended for installation primarily on furnaces and boilers for fuel conservation purposes. However, adequate maintenance and repair items will also be available for Fall distribution for use in conjunction with the items made available

for the conservation program, since sufficient material has already been programmed for this purpose. Such items as radiator air valves, hot water valves, and radiator traps are included among the repair and maintenance items permitted.

The control manual issued by the Fuel Conservation Council fills a need for an impartial and objective publication, according to M. W. Crew, chairman. The need was recognized last year when the industry began work with Government bureaus concerned with fuel conservation. Consistent with the control industry slogan, "Fuel Conservation Starts with Control," the manual indicates specifically how controls are a dominant factor in fuel economy.

The book is available upon request from the Fuel Conservation Council for War, 500 W. Oklahoma Ave., Milwaukee, 7, Wis., or through any of the 26 controls manufacturers identified with the Council.

◈

Frank H. Van Blarcom, vice-president and general manager of Lynn Products Co., Lynn, Mass., died on June 10, following a long period of failing health. Mr. Van Blarcom was prominent in association work, having been a former president of the Distillate Burner Manufacturers' Association, and a director of OHI.

Standard Bureau Outlines Oil Specification Assumptions

FOLLOWING THE RECENT Chicago meeting of oilburner manufacturers and oil industry men to study the implications of the changed characteristics of catalytic fueloils, I. J. Fairchild, Chief, Div. of Trade Standards, National Bureau of Standards, has written an outline of assumptions, basic facts and recommendations, defining the nature of the problem. Solutions are still future, but the Chicago group agreed on the fundamentals set forth. Before the meeting, Fairchild had sent out a memorandum stating the problem as he saw it, but a number of changes were made at the meeting. The revised memorandum follows:

ASSUMPTIONS

1. There must be an assumption as to the time when the European war will end, which, for purposes of planning, is asssumed to be sometime in 1944.

2. Planning for purposes of revision of CS12-40 should cover a postwar period of 5 years.

3. Present Government controls will be discontinued in due course.

4. An ample supply of crudes will be available, even though the exact sources and types may not be predictable. In view of decreasing availability of low sulfur crudes, it is believed that fuel oils may have higher sulfur content.

5. It is desirable to consider at this time, trends in product quality that will effect the best utilization of available crudes.

*BASIC FACTS**

6. The trend toward higher octane gasoline and wider use of the catalytic cracking process tends to produce lower API gravity distillate fuels for the same distillation range and residual fuel oils of different gravity-viscosity relationships than have previously been available. The extent of catalytic cracking installations is described in a paper by Messrs. W. G. Moore and T. G. Elder presented before the American Institute of Mining and Metallurgical Engineers entitled "A Study of the Effect of Catalytic Cracking on the Post-War Supply for Motor Gasolines and Distillates and Residual Fuels."

7. The demand for heating oils far exceeds the demand for diesel fuels.

8. Tank wagon distribution on the eastern seaboard generally provides for only two grades of heating oils, although the two grades are not identical for all companies. One of these grades is generally kerosene, which is sold also as range oil and as No. 1 fuel oil. The second grade is either No. 2 or No. 3 fuel oil, with No. 2 predominating. In order to provide flexibility in distribution, and to minimize complaints, most No. 2 oils have been near the light end of the classification.

9. Tank wagon distribution in some other areas, particularly in the Mid-West, generally provides for three grades. One of these grades is kerosene. The second grade is generally No. 1 fuel oil which is also sold as Range Oil. The third grade is either No. 2 or No. 3 fuel oil. Tank wagon distribution in the Pacific Coast area has generally provided for a heavy type No. 1 and a true No. 3 type fuel oil.

10. True kerosene is needed for wick type and other non flue - connected burners used in devices such as cook stoves, ranges, water heaters, portable space heaters, lamps, incubators, and oil-fired refrigerators.

11. In much of the equipment now in use, true kerosene is furnished where it is not actually required.

12. Equipment which can use range oil (not a true kerosene) is limited to sleeve-type blue flame burners in space heaters, cooking ranges, and kitchen water heaters connected to a flue.

13. Heating equipment connected with flues requiring No. 1 fuel oil is as follows:

(a) rotary wall flame burners;
(b) pot-type space heaters;
(c) pot-type floor furnaces;

(*Continued on page* 48)

*References to fuel oil grades are to CS12-40.

"D" Day has come
"V" Day is coming!

WHEN our ships began to land men on the coast of Normandy, it was not a sudden decision, but the crystallization of months of planning, the fruition of years of preparation . . . the putting into action of masses of men, backed by ships, guns and materiel. Without this careful planning and thorough preparation, carried through on time, the amazing achievement of "D" Day would have been impossible.

The facts, as everyone knows, are that the landing was made according to plan. Men, guns, tanks and planes all worked together and moved into position. We are not only holding our positions but moving ahead!

Achievement in business—your business and ours—comes only as a result of step-by-step planning. Men and materials, production and sales, must be synchronized towards the objective. Weeks, yes months, of careful thinking must always precede any successful operation.

Today we are thinking of "V" Day. We are planning thoughtfully and, we believe, intelligently. We know you are studying and planning too. If Toridheet can help you, it will do so. That's part of our plan. But we can only put our forces into action for your benefit when we know that you desire our co-operation.

When "V" Day comes, it will come just as unexpectedly as "D" Day. Will you be ready? Maybe we can help your thinking and give an interesting slant to your planning. We suggest that you get in touch with us.

MEMBER OBI OIL BURNER INSTITUTE

CLEVELAND STEEL PRODUCTS CORP.

TORIDHEET DIVISION • CLEVELAND 2, OHIO

Oil Burners • Air Conditioning Units • Oil-Burner Boilers
Coal and Gas Furnaces • Water Heaters

fueloil & oil heat

(d) pot-type furnaces;

(e) pot-type water heaters;

(f) gun-type burners using less than 1 gal/hr.

14. The equipments listed in paragraph 13 have frequently used a No. 2 fuel oil or a No. 2 fuel oil which may have had the burning characteristics of a No. 1 fuel oil.

15. Home heating equipment designed to use No. 2 or No. 3 fuel oil is as follows:

(a) high or low pressure gun-type burners using oil at a rate of 1 gal./hr. or more;

(b) rotary atomizing-type burners.

16. There is a substantial demand for a No. 3 heavy distillate fuel for industrial process use.

17. The petroleum industry wants to serve heating needs and recognizes the necessity for supplying grades of oil suitable for oil heating equipment now in use. As a result of changes in refinery practices, new heating needs may be served more economically if new home heating equipment is designed to use the lower API gravity, higher heat content fuels in each distillation range, which will be available in increased proportions.

18. It is anticipated that the transition in refining practices mentioned above will not result in any change in present CS12-40 specification limits for "water and sediment" and carbon residue in distillate fuels.

19. Diesel fuels constitute a separate problem, that is, distillate heating fuels may not be expected to satisfy the quality requirements for distillate diesel fuels.

20. There has not been a No. 4 fuel oil classification since No. 4 was deleted from the commercial standard.

21. Subdivisions within No. 5 have been marketed which have resulted in considerable confusion.

(a) Fuel oil of 50 to 125 seconds viscosity, Saybolt universal at 100° F — There is a substantial demand for this type of oil for heating and industrial uses, without preheating.

(b) Fuel oil of 150 seconds viscosity, Saybolt universal at 100° F to 40 seconds viscosity, Saybolt furol at 122° F —There is a substantial demand for this type of oil for heating and industrial uses, with preheating equipment.

(c) These two grades of residual fuel oils should be considered as separate classifications and be individually identified.

22. No. 6 fuel oil of 45 to 300 seconds viscosity, Saybolt furol at 122° F—This oil represents the largest demand of any of the residual fuels.

RECOMMENDATIONS

23. A specification of the limits for wax, gum, sulfur, and substances which affect the corrosiveness and clogging of home heating fuel oil, should be incorporated in any new standards. Consideration should also be given to burning tests or other means of specifying the grades of fuel oil to supplement the physical specifications as used heretofore. It is recommended that this be referred to Technical Committee E of D - 2 of ASTM.

24. The refiners recommend to the burner manufacturers, in order that oil heating may be placed on a most economic basis for the consumer, that both vaporizing and mechanical atomization burners, other than those designed to burn kerosene, be designed to burn efficiently a less volatile No. 2 than has been marketed prior to the war.

25. The refiners recommend that another grade be added to the commercial standard, which will incorporate the substance of paragraphs 21 (a) and (b), whether it be called grade 4, or 5, or 5a, or 5b.

Airtemp National Ads Start

CHRYSLER AIRTEMP published its first 2-color, full-page bleed advertisement in the July 8 issue of the *Saturday Evening Post*. This is a new series, to appear on a one-a-month basis, devoted to the subject of domestic heating. The campaign takes up, point by point, certain fundamentals of proper, adequate home heating and will represent one of the first national efforts by any manufacturer to publish facts that will be helpful in postwar home building and remodeling.

A postscript to the ad copy urges the public to "Check your heating system . . . do the things that will increase its efficiency, assure comfort and save fuel next winter."

The campaign will carry the insignia of the Indoor Climate Institute, of which Paul B. Zimmerman, Airtemp's vice-president in charge of sales, is president.

Warm Air Training Starts For Expected Postwar Boom

TRAINING PROGRAMS designed to fit thousands of men to do a better job of designing and installing up to 1,000,000 warm air heating systems a year postwar, was announced at the Mid-Year Meeting of the National Warm Air Heating and Air Conditioning Association at Chicago, June 7 and 8. Preliminary work has been completed on two of six contemplated bulletins that will serve as a basis for courses of study, though these bulletins are not yet ready for distribution to the industry. Work which now is nearing completion by Prof. S. Konzo and G. A. Voorhees covers "How to Make a Comfort Survey" and "How to Make Floor Plans." The second bulletin is on "How to Check Frame House Construction." Others to follow will deal with proper methods of calculating heat loss and sizing equipment, selection of controls, ducts and fittings, registers and grilles, and other details of warm air system installation.

Another project which is expected to be completed by Prof. Konzo before the annual meeting at Cleveland next December is an Application Manual for Mechanical Warm Air Systems. This will be an installation and operation manual for the trade, and will be simplified to eliminate much of the very technical matter that has been characteristic of such manuals in the past.

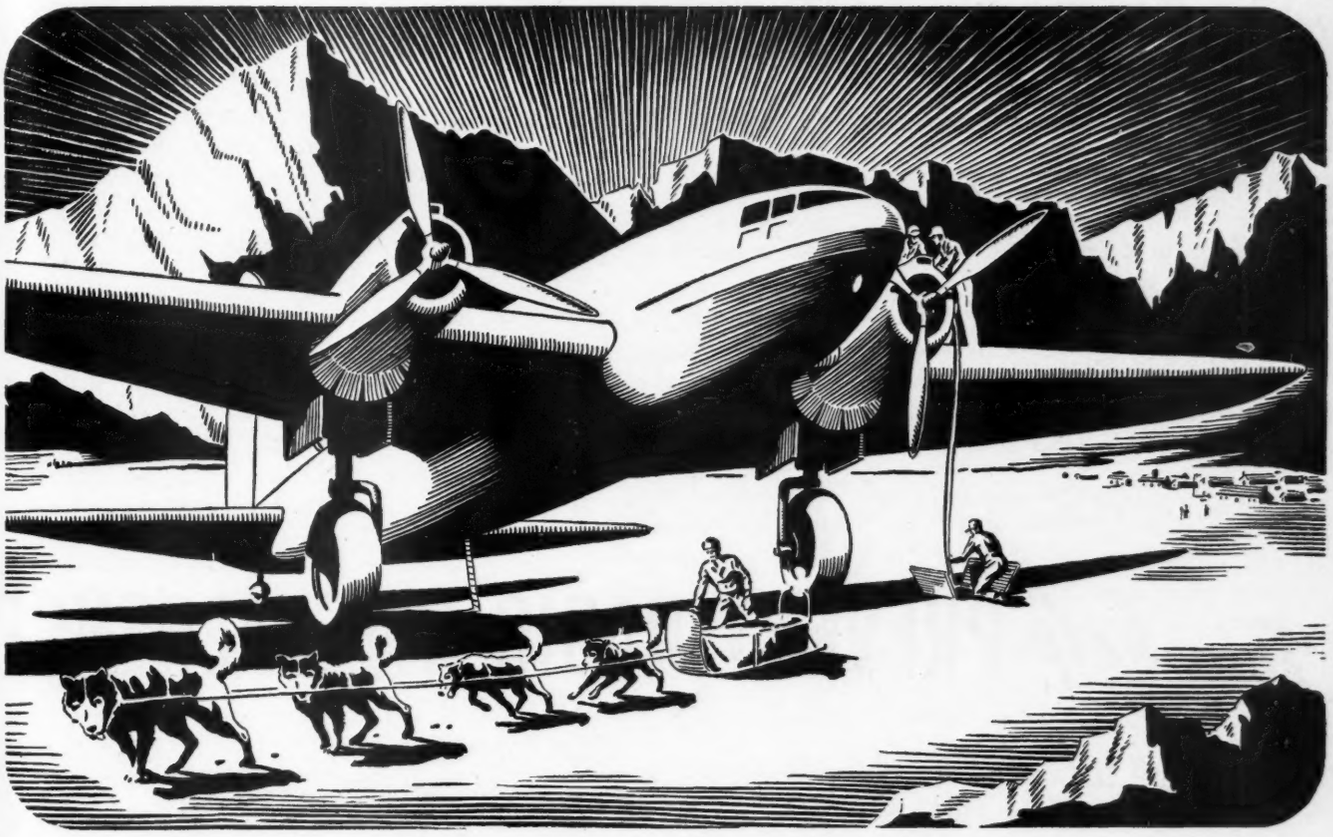
C. E. Lewis, president of Oil-Heat Institute, told the convention there would be oil for 300 years, and presented to the warm air men the highlights of the facts on oil supply that have been developed by OHI's postwar committee. He pointed to the greater yields of distillate heating oils that will be possible through the greater use of catalytic refining, and predicted that the oil era was only now beginning in this country and the world.

The following day Ralph A. Sherman of Battelle Memorial Institute spent 30 minutes of a 35-minute talk trying to prove that we shall be out of oil in 14 years. He said nothing about the advantages of bituminous coal, but urged the conservation of oil for gasoline and Navy fuel. He compared proven oil reserves with the ultimate estimates of coal in the ground using a series of colored charts.

Arthur L. Scaife of General Electric

Up where sawmills have to be flown in...

Bowser Engineered Fueling Systems



Installing airports and fueling systems on the route to Alaska operated by Northwest Airlines for the Army Air Forces, was a mighty tough job. The route was largely through primitive country, some of it so isolated that ground transportation methods were useless. For instance, a 24-bed hospital, complete with X-ray machines, was flown in. So was a sawmill. That gives you an idea of the country . . . and the installation problems.

Bowser Aviation Fueling Systems were chosen for three major reasons . . .

1. In airport operations throughout the United States and in many foreign countries, in large and small installations working under all extremes of conditions, Bowser Systems have proved superior in the delivery of clean, dry, safe fuel.

2. Bowser designs and builds systems to meet virtually every kind of special requirement, however unusual.

3. Bowser-built equipment has established records for dependability and efficiency in hundreds of different industries over scores of years.

Airport fueling systems are a specialized field, of course.

In the petroleum products field, Bowser equipment is even more widely known. Bowser meters and pumps for bulk plants and trucks have given outstanding service to large and small operators for decades.

Here's a quick example: A prominent operator in Providence, R. I., installed a Bowser Xacto Pack with a power take-off on one of his smaller trucks and found that he could deliver 2400 gallons of fuel oil (at the rate of 30 gpm) with the consumption of only one quart of gasoline.

Here's another important point for Bowser users—wherever you're located, you're close to a complete Bowser service organization. BOWSER, INC., Fort Wayne 5, Indiana.

Not only has Bowser's war production earned the Army-Navy E... Bowser equipment has helped earn it for scores of other companies.

BOWSER ESTABLISHED 1885

The Name That Means EXACT CONTROL of Liquids

fueloil & oil heat

urged better sales training and the elimination of straight commission salesmen. He advocated more visual aids in sales work, and predicted that moving picture sales films will be available at about 40% of prewar cost.

Clay Hollister of Producers' Council pointed to a study of distribution in the building industry that showed 77% of the cost of a $5,000 house in the cost of distribution and field labor. He asked development of more "package" units, and the elimination of distribution waste.

Francis Juraschek of Carnegie-Illinois Steel predicted the warm air industry would do two to three times as much business each year postwar if it could meet the demand for heating equipment in a million low-cost houses each year indicated by recent surveys. These studies indicated that the demand would be 60% for homes costing $2,000 to $4,000.

Irving L. Jones, president of International Heater Co., spoke on "Better Accounting Methods in the Industry," and urged a thorough knowledge and study of costs.

Further training and education of the field to sell and install more satisfactory warm air equipment will continue to be made available at the annual "Short Course" at Michigan State, East Lansing. This four-day course of instruction under the direction of Prof. Loring Miller will be held the last week in March, and as in the past, will be designed for beginners as well as experienced men.

Produced 198,000 Furnaces In 1943, Official Reports

THE FURNACE INDUSTRY produced an estimated 198,000 warm air units in 1943, Morgan N. Johnson of WPB told the Chicago meeting of the National Warm Air Heating and Air Conditioning Association, June 8. This was the smallest furnace volume for any year since 1940.

"In 1940," Mr. Morgan said, "the furnace industry produced approximately 531,000 furnaces of all fuel types. Accurate figures for the years of 1941 and 1942 are not available, but an estimate would indicate 568,000 furnaces in 1941 are somewhat in excess of 300,000 in 1942.

"Production figures for 1943, compiled from an eleven months' report by industry with one month estimated, showed 198,000 furnaces of all kinds were produced with very few oil and gas types. For about two years the use of oil and gas as space heating fuel for new installations has been almost totally stopped because of wartime demand for those fuels. Some relaxation is taking place and gas utilities with excess capacity have been given the privilege of accepting additional house heating loads. Oil is still very critical and may remain so for an indefinite period. I want to point out, however, that the restrictions of the furnace limitation order permit the manufacture of all fuel types of furnaces in quantities required to satisfy essential requirements as determined by the interested Claimant Agencies.

"The number of furnaces produced in 1943 together with the excellent job done by the manufacturer, jobber and dealer in allocating distribution apparently satisfied essential civilian needs. This statement is based on the fact that very few appeals to buy furnaces were made to the War Production Board. It may be of

They help PREVENT RADIO INTERFERENCE

Give your postwar oil burners this extra sales feature

G-E ignition transformers are remarkably effective in reducing radio interference. The Class E design (electrostatically balanced) has the midpoint of its high-voltage winding grounded, and a grounded electrostatic shield is incorporated between the high- and low-voltage windings.

Remember, too, that these transformers provide an *unfailing* high-voltage arc—even igniting oil in an ambient as low as minus 10 C when the line voltage is only 70 per cent of normal. They also deliver ample current to overcome such conditions as cold spark points, and oil film on these points. A wide choice of mounting features makes installation easy.

Add them to your list of design "musts"

Bulletins GEA-912D, GEA-2587, and GET-1004 will bring you complete design and product data to add to your file of ideas for postwar improvements. *General Electric Company, Schenectady 5, New York.*

IGNITION TRANSFORMERS

GENERAL ELECTRIC

403-70-5205

interest to you to know that the number of hardship cases that were brought to our attention for relief during the past heating season would number less than twenty-five. I do not, however, want to infer that more furnaces could not have been sold, because there were approximately 75,000 unfilled orders carried over from the year's end by manufacturers. The knowledge of this condition may perhaps be interesting to the distributive part of the industry and indicates to some extent the problem that manufacturers have had in trying to keep everybody reasonably satisfied on deliveries.

"During the first quarter of 1944, 74,000 furnaces were produced of which 65,000 were shipped. If the same rate of production continues throughout a year's period, a total of 296,000 furnaces will be produced for all Military, housing and civilian uses. The production of oil and gas furnaces is low but substantial numbers are being made available for those users who have requirements for them. Considering that solid fuel furnace production, which represents the only real demand today, totalled 65,000 units during the first quarter, the industry is operating at about 80% of the base year 1940. That isn't too bad when we compare the situation with many other industries which are cut way back or completely stopped. It is felt that the War Production Board has been able to treat this industry rather generously but rightfully so because furnaces are essential and the industry has been declared an essential one.

"There isn't any appreciable inventory of solid fuel burning furnaces. A few scattered stocks may exist but they are heavily off-set by unfilled orders which number slightly in excess of 60,000. Those unfilled orders do not necessarily reflect essential need but are mixed with public demand.

"The National Housing Agency has programmed approximately 18,000 furnaces of which most are the solid fuel type. The Office of Civilian Requirements is requesting 55,000 units but this program has not been approved as of this date. Assuming this number should be extended over a full year, civilian replacement would be in line to get 220,000 furnaces during the twelve months period ending June 30, 1945."

which would you pick to heat *this house* ?

the right answer
WILL PUT MONEY IN YOUR POCKET.

The house above is typical of the American home heating market, because more than 75% of our single family dwellings have five to six rooms, or less. This house can be heated very comfortably on *less* than three quarts of oil per hour (figure 35,000 BTU input, per quart) and its owner very likely wants automatic oil heat.

Now suppose this were your home. Would you pick a pressure type burner unit for it, which cannot operate successfully on less than a gallon an hour, or would you select a low-cost, H. C. Little vaporizing, oil-burning unit, which will operate beautifully on as little as two quarts per hour? Common sense says you'd pick the unit designed to do the job – thus saving money on first cost and later on upkeep. That, in a nutshell, is why

H. C. Little *small home units*
WITH THE ONLY AUTOMATIC, VAPORIZING TYPE OIL BURNER EMPLOYING ELECTRIC IGNITION,
Lead the Oil Heating Field

That is why, after the war, H. C. Little dealers will again be sitting pretty – selling what more than 75% of all home owners want – heating equipment designed especially for the typical 5- to 6-room house. These H. C. Little units: oil-burning floor furnaces, wall furnaces, console heaters, hot water heaters, etc., will include fully automatic operation, electric ignition, thermostatic control and vaporizing burners.

Interested?

• Then let us mail you a new booklet, *"How to get Real Profits in Postwar Heating"*

H. C. LITTLE
Burner Co.
SAN RAFAEL, CALIF.
Branches in Principal Cities

Space Heater Men Meet

FOUR HUNDRED members and guests attended the mid-year meeting of the Institute of Cooking and Heating Appliance Manufacturers at Cincinnati, June 7, 8 and 9. The general session on the second day included a talk on "The Stove Industry's Obligation to the Public," by M. F. Cotes, vice-president, Duo-Therm Division, Motor Wheel Corp., Lansing, Mich.; a talk by Wade T. Childress of the War Production Board, and a unique panel discussion in which WPB and OPA executives participated. Those entering the panel discussion included H. J. Holbrook, F. M. Mitchell, John Neukom, Fred Parker and T. P. Kelly.

The Gas Range, Electric Range, Solid Fuel, and Oil Divisions met separately on the third day. The Oil Division, under the chairmanship of Sheldon Coleman of Coleman Lamp and Stove Company, discussed stove rationing and production problems. Oil specifications and the problems that may arise from the use of unblended distillates in space heaters and water heaters were surveyed. There also was consideration of a committee to work on specifications for a proposed universal heating fuel.

Additional Specific Prices

CONNECTICUT

(g) In the State of Connecticut within the areas designated and described below or in the townships and cities listed below, maximum prices for Nos. 2 and 3 fueloil shall be as follows:

[Cents per gallon]

(1) Areas	Loaded into transport trucks or tank cars	Loaded into tank wagons
Danbury	..	7.8
Bridgeport	7.2	7.4
Derby	7.1	7.3
Hartford	7.3	7.5
Essex	7.3	7.5
Middletown	7.3	7.5
Rockville	..	7.8
New London-Norwich	7.2	[1] 7.4
Putnam	..	7.6
New Haven	7.1	[2] 7.4
Greenwich-Norwalk	7.1	7.3

[1] This 7.4 price applies only in Cities of New London and Norwich.
[2] At tanker and barge terminal operators' yards deduct 0.1.

The Danbury area comprises the townships and cities of: Bethel, Brookfield, Danbury, New Fairfield, Newtown, Redding, Ridgefield, and Danbury City.

The Bridgeport area comprises the townships and cities of: Bridgeport City, Easton, Fairfield, Monroe, Stratford, Weston, Westport, and Trumbull.

The Derby area comprises the township of Derby.

The Hartford area comprises the townships and cities of: Weathersfield, Windsor, Windsor Locks, Manchester, Newington, Rocky Hill, Simsbury, South Windsor, West Hartford, Avon, Bloomfield, Bolton, Canton, East Granby, East Hartford, East Windsor, Glastonbury and Hartford City.

The Essex area comprises the townships and cities of: Chester, Clinton, Essex, Killingsworth, Lyme, Madison, Old Lyme, Old Saybrook, Saybrook, Westbrook.

The Middletown area comprises the townships and cities of: Marlboro, Middlefield, Middletown City, Portland, Salem, Colchester, Cromwell, Durham, East Haddam, East Hampton, Haddam, and Hebron.

The Rockville area comprises the townships and cities of: Ashford, Ellington, Tolland, Vernon, Rockville City and Willington.

The New London-Norwich area comprises the townships and cities of: East Lyme, Waterford, New London City, Groton, Stonington, North Stonington, Ledyard, Montville, Norwich City, Norwich, Preston, Bozrah, Franklin, Sprague, Lisbon, Griswald and Voluntown.

The Putnam area comprises the townships and cities of: Woodstock, Pomfret, Putnam, Thompson, Eastford and Putnam City.

The New Haven area comprises the townships and cities of: Bethany, Branford, Cheshire, East Haven, Guilford, Hamden, Milford, New Haven, North Branford, North Haven, Orange, Prospect, Wallingford, West Haven and Woodbridge.

The Norwalk-Greenwich area comprises the townships and cities of: Stamford, Greenwich, Stamford City, New Canaan, Darien, Norwalk City and Wilton.

(2) *For tank wagon deliveries*—(i) *For single lot deliveries of 100 gallons or more:*

	Cents per gal.		*Cents per gal.*
Andover	9.2	Danbury	9.1
Ansonia	9.1	Darien	9.0
Ashford	9.3	Derby	9.1
Avon	9.2	Durham	9.2
Barkhamsted	9.6	East Granby	9.2
Beacon Falls	9.1	East Haddam	9.2
Berlin	9.4	East Hampton	9.2
Bethany	9.0	East Hartford	9.2
Bethel	9.1	East Haven	9.0
Bethlehem	9.3	East Lyme	9.1
Bloomfield	9.2	East Windsor	9.2
Bolton	9.2	Eastford	9.3
Bozrah	9.1	Easton	9.0
Branford	9.0	Ellington	9.3
Bridgeport	9.0	Enfield	9.3
Bridgewater	9.2	Essex	9.2
Bristol	9.4	Fairfield	9.0
Brookfield	9.1	Farmington	9.4
Brooklyn	9.1	Franklin	9.1
Burlington	9.4	Glastonbury	9.2
Canaan	9.3	Goshen	9.6
Canterbury	9.1	Granby	9.3
Canton	9.2	Greenwich	9.0
Chaplin	9.2	Griswald	9.1
Cheshire	9.0	Groton	9.1
Chester	9.2	Guilford	9.0
Clinton	9.2	Haddam	9.2
Colchester	9.2	Hamden	9.0
Colbrook	9.6	Hampton	9.2
Columbia	9.2	Hartford	9.2
Cornwall	9.3	Hartland	9.3
Coventry	9.2	Harwinton	9.6
Cromwell	9.2	Hebron	9.2

Will your post-war efforts go into

Buying or *Selling?*

A POST-WAR need for 2,000,000 new dwelling units (Business Week forecast) . . . plus industrial heating requirements and burner replacements . . . will create a tremendous oil burner market.

When that time comes, you'll want to be sure of your source of supply. Production may fall short of demand during the months of reconversion. But *you'll* want enough new heating units to take care of *your* share of post-war sales.

A few minutes now will save hours of *buying-effort* later.

TAKE a few minutes now to write and inquire about Herco's plan for dealers—a plan for post-war distribution which gives you Herco sales rights in your territory and assures you a full share of new Hercos. Your inquiry will put you under no obligation.

HERCO OIL BURNER CORPORATION, Lancaster, Pa.

"HEATING BY HERCO"
means
Service in Wartime Sales in Peacetime

HERCO
The Oil-Thrifty
OIL BURNER

	Cents per gal.		Cents per gal.
Kent	9.2	Rocky Hill	9.2
Killingly	9.1	Roxbury	9.2
Killingworth	9.2	Salem	9.2
Lebanon	9.2	Salisbury	9.3
Ledyard	9.1	Saybrook	9.2
Lisbon	9.1	Scotland	9.2
Litchfield	9.6	Seymour	9.1
Lyme	9.2	Sharon	9.3
Madison	9.2	Shelton	9.1
Manchester	9.2	Sherman	9.2
Mansfield	9.2	Simsbury	9.2
Marlboro	9.2	Somers	9.3
Meriden	9.4	South Windsor	9.2
Middlebury	9.3	Southbury	9.1
Middlefield	9.2	Southington	9.4
Middletown	9.2	Sprague	9.1
Milford	9.0	Stafford	9.4
Monroe	9.0	Stamford	9.0
Montville	9.1	Sterling	9.1
Morris	9.6	Stonington	9.1
Naugatuck	9.3	Stratford	9.0
New Britain	9.4	Suffield	9.3
New Canaan	9.0	Thomaston	9.3
New Fairfield	9.1	Thompson	9.3
New Hartford	9.6	Tolland	9.3
New Haven	9.0	Torrington	9.6
New London	9.1	Trumbull	9.0
New Milford	9.2	Union	9.4
Newington	9.2	Vernon	9.3
Newtown	9.1	Voluntown	9.1
Norfolk	9.3	Wallingford	9.0
North Branford	9.0	Warren	9.2
North Canaan	9.3	Washington	9.2
North Haven	9.0	Waterbury	9.3
North Stonington	9.1	Waterford	9.1
Norwalk	9.0	Watertown	9.3
Norwich	9.1	West Hartford	9.2
Old Lyme	9.2	West Haven	9.0
Old Saybrook	9.2	Westbrook	9.2
Orange	9.0	Weston	9.0
Oxford	9.1	Westport	9.0
Plainfield	9.1	Wethersfield	9.2
Plainville	9.4	Willington	9.3
Plymouth	9.3	Wilton	9.0
Pomfret	9.3	Winchester	9.6
Portland	9.2	Windham	9.2
Preston	9.1	Windsor	9.2
Prospect	9.0	Windsor Locks	9.2
Putnam	9.3	Wolcott	9.3
Redding	9.1	Woodbridge	9.0
Ridgefield	9.1	Woodbury	9.2
		Woodstock	9.3

(ii) For single lot deliveries of less than 100 gallons the maximum price at each point stated in subdivision (i) above shall be increased by .5¢ per gallon.

MASSACHUSETTS

(b) *Worcester, Massachusetts Area.* In the Worcester, Massachusetts Area, comprising the following townships and cities: Auburn, Barre, Berlin, Boylston, Charlton, Clinton, Dudley, East Brookfield, Grafton, Holden, Hopkinton, Lancaster, Leicester, Millbury, New Braintree, Northbridge, North Brookfield, Northborough, Oakham, Oxford, Paxton, Princeton, Rutland, Shrewsbury, Southbridge, Spencer, Sterling, Sutton, Upton, Webster, West Boylston, Westborough and Worcester, maximum prices shall be as follows:

(1) For kerosene, No. 1 Fuel Oil and Range Oil:

	Cents per gal.
Loaded into buyers' tank wagons	8.3
Loaded into containers in quantities of 10 gallons or less at sellers bulk plant	10.8
Tank wagon deliveries to resellers in quantities of 25 gallons or over	10.6
Tank wagon deliveries to consumers in quantities of 25 gallons or over	10.6
Tank wagon deliveries in quantities of less than 25 gallons and truck deliveries in containers in quantities of less than 25 gallons	12.1

(2) For Nos. 2, 3 and 4 Distillate Fuel Oil:

	Cents per gal.
Loaded into buyers' tank wagons	7.8
Tank wagon deliveries to consumers in quantities of 100 gallons or over	9.3
Tank wagon deliveries to consumers in quantities of less than 100 gallons	9.8

Harold W. Sweatt, president of the Minneapolis-Honeywell Regulator Company, has been elected to the Board of Directors of the Chicago and North Western Railway Company.

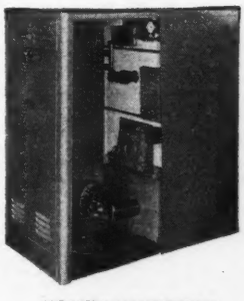
BLUEPRINTS FOR YOUR HOUSE *of* TOMORROW

YOU MAY HAVE ROBOT SERVANTS

Imagine taking life easy while a mechanical servant does the work!

BUT –

Your Heating Plant will be KOVEN WATERFILM



KOVEN WATERFILM BOILER-BURNER UNIT

There will be many wonderful improvements in the home of tomorrow, but then as well as now, wise home owners will still rely on KOVEN WATERFILM BOILERS for heating satisfaction. This smartly jacketed boiler incorporates all the latest scientific developments to bring you heating comfort plus economy of operation. KOVEN WATERFILM, the fastest steaming boiler on the market, provides quick heat, even room temperature and a plentiful supply of domestic hot water at all times. The WATERFILM BOILER is made for automatic firing with oil, stoker or gas, in a variety of models for factories, apartment houses and both large or small homes. The sectional series for apartment house or industrial plants can be taken through a 2 foot door thus eliminating rigging and alteration costs. Call or write KOVEN today for complete information.

WATERFILM BOILERS, Inc.

154 OGDEN AVENUE JERSEY CITY, N. J.

PLANTS: JERSEY CITY, N. J. • DOVER, N. J.

Reader's Problems

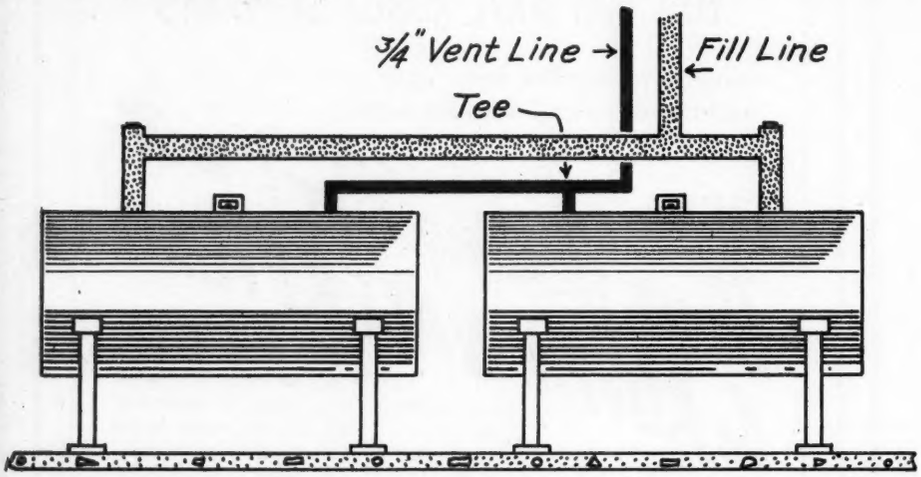
Q. Fuel oil squirts from the vent pipe when I deliver to a certain customer who has two 275 gallon tanks connected to the same fill line and vent line (upper drawing). One suggestion is to run a vertical vent pipe from each tank to the level of the basement ceiling. At ceiling height, the two vent pipes would be connected together and to a horizontal line which runs outdoors and then up six feet to the vent cap. A second suggestion is to install a fill line for each tank, then to fill one tank at a time. According to this idea, no changes would be made to the vent line used now. We do not like a freak installation to which oil can be delivered only slowly and with great care to avoid oil spills.

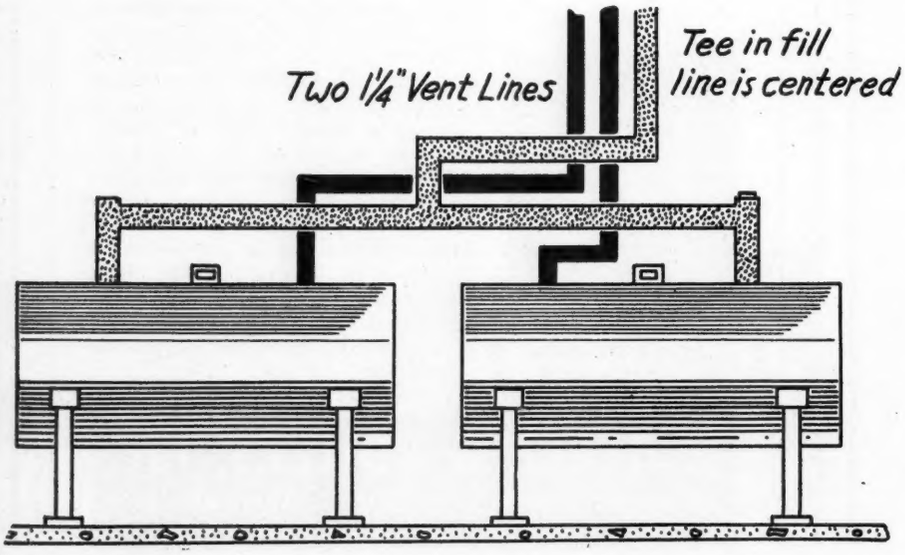
G.S.S., Washington, D. C.

A. To begin, the trouble lies in one tank filling with oil before the other, when you deliver. The first tank to become full sends oil, instead of air, to the vent line tee which is marked in the upper drawing. Thus the tee receives oil from the full tank and air venting from the tank not yet full, and a mixture of oil and air spurts from the vent cap.

The trouble is greater on this installation because a ¾" vent line is used. We recommend you switch to the standard vent line size of 1¼".

For sure cure, use the ideas shown in the lower drawing. Install an entirely independent vent line and vent cap for each tank. This will eliminate the trouble of air from one tank (the slower to fill) mixing in a vent line tee with oil from the other tank. Also, change the fill line, as indicated in the drawing, to make for a more even distribution of the oil to the two tanks when oil is being delivered.





◈

Q. A horizontal rotary cup burner trips its safety control button two or three times a week when No. 6 oil is used during the coldest months, but gives no trouble on No. 5 oil. Using the heavier oil, the pressure gauge on the burner dips from 45 lbs. to 15 lbs. every few minutes. Maximum suction at pump inlet, using No. 6, is 15" for a cold start and for an oil temperature of 90°F. observed on a suction line thermometer installed to give the temperature of the oil entering the boiler room from the outside lines. Normal running vacuum, using No. 6 oil, is 9" to 12" at the pump inlet. Installing a new pump capable of giving 27" vacuum did not end the difficulties. Should we install a 3" suction line in place of the 2" line used in the past? This line is 55 ft., measured horizontally. The tank bottom is 8 ft. below the oil pump. Pumping rate is about 120 gph. Hot oil is delivered to the plant every three days of the coldest month. Instead of installing the larger suction line, should we install an independent oil pump set, or in some other way increase the pumping rate by about 50%?

H.H.W., Pittsburgh.

A. Check thoroughly to make sure that the tripping of the safety button is caused by oil pumping difficulties, not by an ignition problem related to the use of heavier oil. The 15" cold-start pump inlet reading is not too high; many burners start well with readings up to 22". Your thought of arriving at a higher pumping rate seemingly is in the wrong direction. Also, installation of the larger suction line should be entirely unnecessary. There are good indications of a suction line leak inside or outside the boiler room. We recommend that you make the standard 100 lb. air pressure test of the entire suction line, from the bottom of the tank to the burner connection. If you can find and eliminate leaks, you can be confident that next winter there will be no oil pumping difficulty while No. 6 oil is used.

◈

Q. I'm just an ordinary oil burner mechanic, not a graduate combustion engineer, and I have a tough time arriving at

NOW

WITH THE INVASION IN FULL SWING

IT'S MORE IMPORTANT THAN EVER BEFORE THAT WE STAY ON THE MAIN TRACK!

Recently we mentioned in these columns that we at Automatic Burner Corporation have a one-track mind — and that our minds are focused on one thought above all else — Victory over the Axis! This thought must remain uppermost in our thoughts and in our production, until the war is won. Here at A. B. C. we are manufacturing for our armed forces—and until our armed forces have achieved victory over the enemy on every front—or until such a time as we are told that our services are no longer needed—we will keep at this vital task and give it everything we have!

AUTOMATIC BURNER CORP.

1823 CARROLL AVE. CHICAGO

1841 BROADWAY NEW YORK

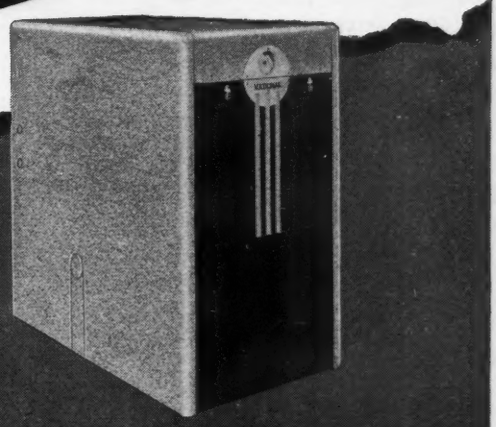
ABC Oil Burner

Back The Attack — Buy and Hold War Bonds!

fueloil & oil heat

N·R OIL HEATING UNITS

now available



NO. 20 SERIES OIL HEATING UNIT

We still have a limited stock of jacketed oil heating units available from inventory. Shipments may be made for immediate replacement of worn out and inefficient oil heating installations.

Sell these Units now for fuel conservation.

The NATIONAL RADIATOR Co.

218-0 Central Avenue · Johnstown, Pa.

50 YEARS OF SERVICE TO THE HEATING INDUSTRY

THE NATIONAL RADIATOR COMPANY

218-0 CENTRAL AVENUE · JOHNSTOWN, PA.

Save.....oil heating units for me.

Rating..... steam ☐ water ☐

Name.....

Street.....City.....

proper answers to questions on what's right and what's wrong in trying to burn oil without wasting most the heat in it. During the past month, for example, I used modern instruments to check on 65 oil burner installations. About half of these are industrial jobs, attended by firemen supposed to know how to burn oil efficiently in large plants, but actually ignorant of everything but watching the boiler waterline and the steam pressure gauge. The other burners I test are domestic and full-automatic commercial.

Please help me by indicating what is "Excellent," "Fair," and "Intolerably Wasteful" with respect to (a) CO_2 readings, (b) stack temperature readings, (c) draft readings. What I'm looking for is a few thumb rules I can bank on as 100% dependable.

SERVICEMAN, Brooklyn, N. Y.

A. In a brief reply, we can give you only highlights. As you seem to realize, to cover fully the subject of arriving at efficient combustion of fuel oil would take more than a 400 page book.

Regarding CO_2 readings: For automatic burners, you can bank on 12% or higher being excellent. Fair is about 9% to 12%. Lower than 9% is wasteful. Set for high efficiencies, attended industrial burners should show 12% to 13½% CO_2. In a large plant, where a difference of ½% CO_2 can mean the saving or wasting of a few thousand gallons of oil a month, considerable technical knowledge and a good deal of thorough testing is needed to come to the conclusion regarding just how high a CO_2 reading the fireman should aim at.

Regarding stack temperature readings: For heating plants and low-pressure commercial boilers, excellent would be lower than 500°; we have before us test reports that show the boilers installed by a certain equipment dealer generally give stack temperatures of 325° to 400°. The fair range of stack temperatures might be about 450° to 600° or, if you would be somewhat more lenient about condemning furnaces and boilers as you find them, you could regard 500° to 700° as fair. Similarly, stack temperatures above 600° or above 700° may be considered excessive and wasteful, depending on how high you desire to set your standards.

Of course, stack temperature readings and CO_2 readings should be considered together because the combination gives a good idea of the stack loss. You might say that a stack loss of less than 20% of the heat in the oil is excellent; of 25% to 20% is fair; of greater than 25% is wasteful. Study a stack loss chart and you will find these figures more lenient than the separate figures given for CO_2 readings and stack temperature readings.

Temperature Considerations

The interpretation of stack temperature data for industrial boiler plants is more complicated, for in these the temperatures of the steam and boiler water must be considered. Also to be considered are the boiler ratings compared to delivered horsepower, the boiler and burner designs, the use or possibilities of using economizers and air preheaters, and the percentage of time and the amount of fuel involved in the peak load operation which produces the poorest stack loss figures. It is desirable that the stack loss of a large boiler plant be less than 12% or 14% of the gross heat in the oil.

OPPORTUNITY
OPPORTUNITY
FOR YOU!
(IF YOU'RE A HEATING EQUIPMENT DEALER)
Send for this FREE Brochure...
A fascinating prevue of profit-packed post-war prospects for live heating equipment dealers. Hot off the press . . . with information as fresh as today's front page news. Drop us a line, NOW, with mailing instructions for YOUR copy.
IN THE HEART OF THE MOST CONCENTRATED AUTOMATIC HEAT MARKET IN THE WORLD
C M W
CATSKILL METAL WORKS, INC. CATSKILL, N.Y.
ONE OF THE LARGEST PRODUCERS OF ANTHRACITE STOKERS

Regarding draft readings: Concentrate on the overfire readings, and aim for the lowest that do not give the troubles of insufficient draft which are characteristic for the particular equipment. A bare trace of draft, less than can be read using the ordinary draft gauge, is sufficient for a goodly percentage of modern domestic installations which are in topnotch condition. Rarely if ever is higher than .04″ draft needed for a burner which fires less than 5 gph. For small to moderate-size commercial installations, say 10 to 50 gph, a suitable draft may be .05″ to .15″. As for the other items, industrial applications are special and require widely different draft depending on their characteristics and on the designers' intentions. Some boilers producing 1,000 to 3,000 hp. may operate well with .10″ draft, while others may need up to .30″ to .50″. Big factors include the use of forced-draft or natural-draft burners, the need to "force" the boilers, the stability of the flames, the use of chimney draft or induced draft blowers, and the relative importance of avoiding the evils of insufficient draft momentarily or for a few minutes at a time in the particular plant.

Readers' Forum

TORRINGTON MFG. CO.
Torrington, Conn.

Editor:

I note with keen interest the article in the May issue of FUELOIL & OIL HEAT relating to aircraft heater development.

I believe you will be interested to know that the complete blower unit, including fan and housing that Anchor Post Fence Company uses was developed in our laboratory. Its unique construction is patented.

You may be interested as well to know that we supplied the blower for the Surface Combustion "Janitrol" vaporizing unit. In the illustration you used the blower unit was not shown.

Development of the present, simplified blower units is an interesting story. From an original manufacturer's design including a double shafted motor, a separate housing and fan for each motor shaft, and another housing covering the whole, we developed a single shaft motor design with one fan and housing, and saved about two-thirds the weight and space. That is why we trimmed all other competitors. That is where the Laboratory "know how" comes in.

ALEXIS DOSTER,
Vice President.

FEDERAL HOUSING ADMINISTRATION
Washington, D. C.

Editor:

June 1944 will mark the Tenth Anniversary of the establishment of the Federal Housing Administration. Whatever have been our accomplishments—in peace and in war—in the decade just passed, I feel have been due in no small measure to the encouragement and uniformly friendly cooperation we have received from financial institutions and the building and allied industries.

It seems appropriate, therefore, in observing the event, for me to express to at least a number of those who have contributed so much to our progress the personal pleasure I have taken in this long association. I am sure this sentiment is shared by my predecessors, Administrators Moffett and McDonald, and by all

DEALERS & DISTRIBUTORS ATTENTION!

ENTERPRISE

HAS PERFECTED THE

METER MASTER

FOR HEAVY FUEL OIL BURNERS

Pre-war type Burners are available on approved orders

ENTERPRISE COMBUSTION EQUIPMENT

DIVISION OF ENTERPRISE ENGINE & FOUNDRY CO.

SEATTLE • SAN FRANCISCO — 18TH & FLORIDA STS.

Enterprise OIL & GAS BURNERS

NEW YORK • WASHINGTON, D. C. — SAN FRANCISCO

of our officers and staff in Washington headquarters and in the field.

The legislation under which we operate is, as you know, neither compulsory nor regulatory, but entirely of a permissive character. It encourages a voluntary alliance of industry and finance with government on the basis solely of their mutuality of interest. So, as I look back upon the past ten years, I like to feel that it has been impressively demonstrated that the public interest is well served when, as in the FHA program, the government achieves its objectives by a wholly volitional union with business and finance and where the driving power of private enterprise is preserved intact.

On the record of what we have accomplished as associates, I am sure we can look forward with mutual confidence to a post-war era of even larger service to the home-owners and prospective home-owners of the Nation. We shall then be faced with the task of contributing to a better built America and thereby of assisting in the maintenance of the full level of employment.

ABNER H. FERGUSON,

Commissioner.

DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE			
	May		Percent		(Sept. 1 to May 31)			Percent
Normal	1943	1944	Change*		Normal	1943	1944	Change*
221	234	112	— 48.9	Albany	6587	7334	7122	+ 8.1
32	8	33	+ 3.1	Atlanta	2999	2820	2880	— 3.9
99	63	25	— 74.3	Baltimore	4509	4409	4445	— 1.4
248	243	121	— 51.0	Boston	5853	6156	5986	+ 2.2
351	411	130	— 62.9	Buffalo	6805	7275	6904	+10.4
259	301	136	— 47.5	Chicago	6205	6849	6381	+ 2.8
132	102	58	— 56.2	Cincinnati	4993	4885	4927	— 1.3
255	249	96	— 62.5	Cleveland	5926	6319	6126	+ 3.0
14	7	18	+ 28.8	Dallas	2378	2321	2436	+ 2.3
271	387	226	— 16.6	Denver	5784	5282	5815	+ .5
165	249	139	— 15.7	Des Moines	6356	6718	6406	+ .8
269	285	144	— 46.0	Detroit	6660	6800	6561	— 1.5
263	291	175	— 30.4	Grand Rapids	6655	6873	6654	..
216	194	86	— 60.1	Hartford	6037	6433	6284	+ 5.8
409	499	359	— 12.0	Helena	7600	8483	7702	+ 1.3
2	0	4	+100.0	Houston	1323	1212	1326	+ .2
155	121	82	— 47.0	Indianapolis	5459	5657	5383	— 1.4
106	153	114	+ 7.5	Kansas City	4971	5064	5218	— 5.0
104	44	98	— 5.7	Los Angeles	1362	1125	1408	+ 3.4
92	47	59	— 35.7	Louisville	4421	4499	4315	— 2.5
340	380	261	— 23.5	Milwaukee	6955	7649	7081	+ 1.8
255	321	193	— 24.3	Minneapolis	7898	8550	7648	— 3.2
1	0	2	+100.0	New Orleans	1208	1205	1234	+ 2.2
176	162	93	— 47.1	New York	5270	5308	5364	+ 1.8
152	240	148	— 3.6	Omaha	6074	6288	6384	+ 5.1
117	115	41	— 64.9	Philadelphia	4732	4913	4842	+ 2.3
170	130	42	— 7.8	Pittsburgh	5427	5666	5435	+ .1
375	377	310	— 14.6	Portland, Me.	7128	7786	7725	+ 8.4
241	266	208	— 12.4	Portland, Ore.	4214	4050	3958	— 6.1
245	203	93	— 62.0	Providence	5946	5958	5783	— 2.7
88	93	94	+ 6.8	St. Louis	4602	4675	4717	+ 2.5
233	304	213	— 8.5	Salt Lake City	5568	5499	6118	+ 9.9
252	224	255	+ 1.1	San Francisco	2562	2446	2454	— 4.2
494	521	346	— 29.9	Sault Ste. Marie	9021	9416	8732	— 3.2
304	322	262	— 13.7	Seattle	4560	4333	4101	—10.0
226	251	131	— 92.0	Toledo	6202	6619	4611	—25.6
104	73	15	— 14.4	Washington	4582	4376	4486	— 2.1

*Compared with normal.

BROOK, SMITH, FRENCH & DORRANCE, INC.
Detroit, Mich.

Editor:

I want to congratulate you on the splendid article "Service in the Black" in the June issue of FUELOIL & OIL HEAT.

I, for one, realize that this type of reporting requires considerable extra time, greater accuracy, and a great deal more leg work, but it certainly makes for factful, interesting reading.

Case histories like this stimulate dealers, help manufacturers get new dealers, encourage a better grade of dealers into the industry, and tend to pep up all dealers in the industry.

I do hope you find the time to continue to feature an analysis of an individual dealer's business in subsequent issues.

JACK WILLIAMS

Sid Harvey Expands

SID HARVEY, Inc. has let the contract for an addition to the present building which will about double their present quarters. Work has already been started, and is expected to be finished before the fall rush starts.

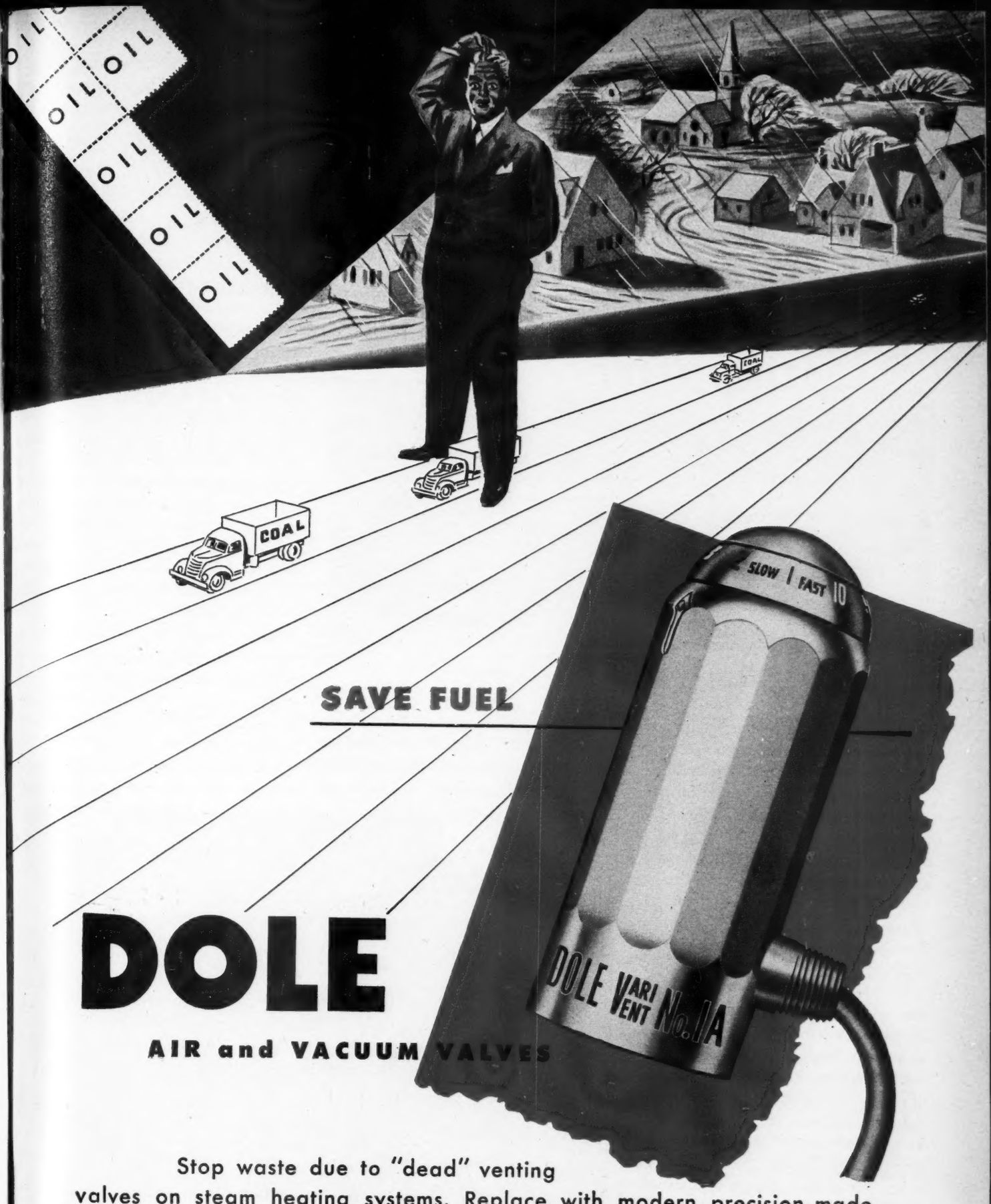
Permission from the W.P.B. to go ahead with this building was obtained

New Sid Harvey plant

after thorough investigation of the kind of work that they were doing and the necessity for more space.

It is interesting to note that W.P.B. has recognized the importance of maintaining existing oil burner installations in the highest possible efficiency by granting permission to erect the new building.

WPB investigators found that Sid Harvey, Inc. has been called on by more and more service organizations to rebuild and salvage oil burner pumps, valves, controls, since many of the original equipment factories are too busy with war work to allow them to do repair work for their field organizations. As a consequence the request for additional space was given a speedy go-ahead.



SAVE FUEL

DOLE

AIR and VACUUM VALVES

Stop waste due to "dead" venting valves on steam heating systems. Replace with modern precision-made Dole Valves. The No. 1A Vari Vent permits balancing near and distant radiators — **The Dole Valve Company, 1901-1941 Carroll Avenue, Chicago 12, Illinois — Representatives in Principal Cities.**

Esso Designs New Transport

CONSIDERED THE FORERUNNER of a decided advance in commercial vehicle design that sharply reduces maintenance costs, seven 5,500-gallon tank semi-trailers are today rolling along Arkansas highways after having successfully passed "laboratory tests" which proved that radical changes in chassis and body construction, developed by Esso Marketers in collaboration with three automotive firms, would largely eliminate tank leakage, frame and axle breakage, excess tire wear, and also lower fuel consumption.

Advanced design 5,500-gal. semi-trailer transport

Trial runs of the new vehicle for close comparison with "old style" 4000-4200-gallon single axle semi-trailers revealed that the larger units can transport equivalent quantities with a 25 percent reduction of man and truck hours, a saving of 35 percent in truck miles, a 25 percent reduction in tire wear, and a lower fuel cost of 25 percent.

In describing the basic design of the new vehicle, J. F. Winchester, Esso Marketers Supervisor of Motor Vehicles, declared that, "Such a unit had to overcome costly mechanical maintenance, eliminate or reduce to a minimum tire scuffing with the resultant wear of rubber, and eliminate so far as possible all stress on the tank container in order that it might safely be made of the lightest weight material permitted by I. C. C. specifications without the danger of encountering throughout its life numerous leaks which create hazardous operating conditions in addition to costly operation due to high maintenance and a high percentage of lost time."

Heeding the government's plea for wartime conservation of rubber and equipment, Esso began even more intensive research into economical vehicle operation many months ago.

As a result of this research, Esso brought forth plans for the low-cost tank vehicle. Ideas for the new axle were worked out in cooperation with the Trucktor Corporation for fabrication into a multi-wheel unit. The aid of the Differential Wheel Company was also enlisted to supply a special wheel; and the Davis Welding and Manufacturing Company built the "frameless" tank body and assembled the complete mobile unit.

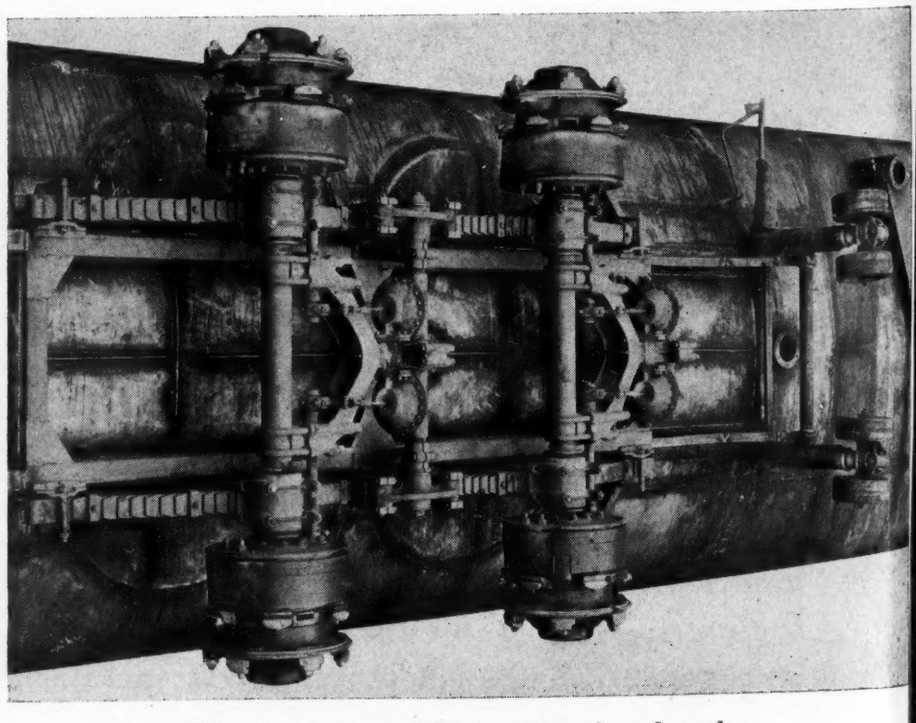
The efficiency of the new tandem-axle chassis is highlighted by a minimum number of wearing parts, a smaller number of lubrication points, rubber spring mountings, and new spring design.

The only wearing parts are five bushings on each side in the rocker arm assembly. They are accessible, close together and located between the two wheels.

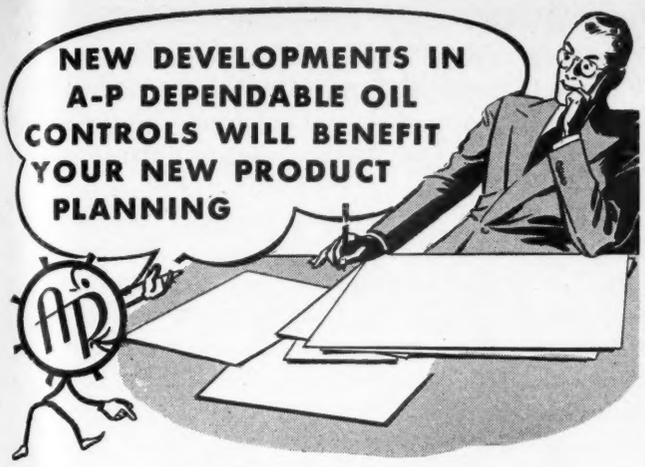
Lubrication is confined to seven lubrication fittings on each side, in the five rocker arm bushings, and the two slipper spring ends.

The rubber spring mounting assembly consists of two individual springs on each side connected through a rocker beam by means of shackles in the center and with slipper type ends attached to the two axles by large rubber mounted spring seats. Due to the action of this rubber mounting, the springs are load carrying members only and take no braking strains, resist no axle tension, and do not act as radius rods. Within generous limits each axle is free to "float" in all directions in the large rubber bushings.

When an axle goes over a rise or depression in a road, it assumes an angle in the rubber bushings without putting stress into the springs and into the tank through the springs. This flexibility results in the springs remaining "square" with the frame structure at all times. Long experience has demonstrated that these bushings need no attention or servicing and



Worm's eye view of Esso's 5,500-gal. tank trailer



Right now, in A-P research laboratories, designers and engineers are readying new DEPENDABLE Oil Controls for your new post-war gravity oil burning heaters and furnaces.

Some of these new controls are for specific new products; others are the continuing developments always under progress at A-P—*anticipating* your future needs for accurate, dependable oil control on all types of oil burning appliances. You can depend on it—they'll offer the last word in modern fuel control efficiency, the product of one of the most skilled and experienced staffs of control engineers in the industry.

For an effective and profitable solution of YOUR new oil control problems, use the service of A-P research. Send blueprints, or write for engineering assistance.

A-P Complete Furnace Control Set for gravity-fed Oil Burning Furnaces Includes modern wall thermostat, constant level oil control, circulating fan switch with inbuilt transformer.

AUTOMATIC PRODUCTS COMPANY

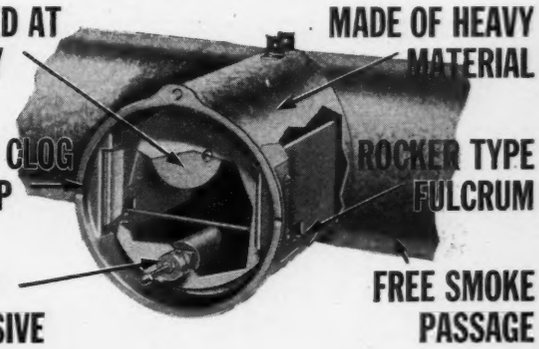
2458 NORTH 32nd STREET • MILWAUKEE 10, WISCONSIN

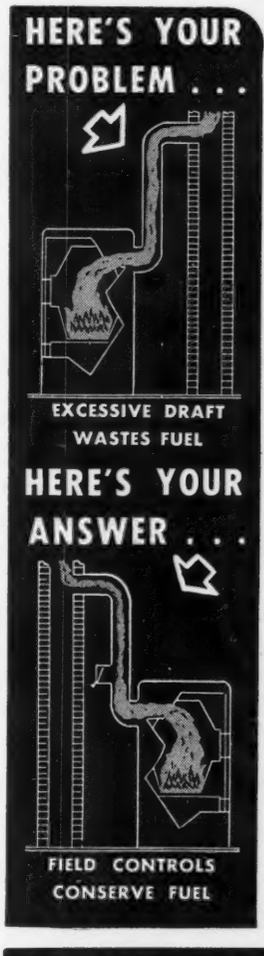
DEPENDABLE
OIL CONTROLS

fuelail & oil heat

Fuel-Saving Starts With CONTROL

Field Barometric DRAFT CONTROL





★ **The delicately balanced, but strongly built Field Barometric Draft Control compensates immediately for the slightest change in barometric pressure. Through all types of weather, it maintains the minimum draft necessary for proper combustion.**

★ **A Field Control provides fuel savings ranging up to 25%. There is a model adapted to any type or size of heating installation . . . coal or oil. The domestic controls can be installed in as little as thirty minutes; installation requires only a tin snips, a carpenter's spirit level, a little "know-how."**

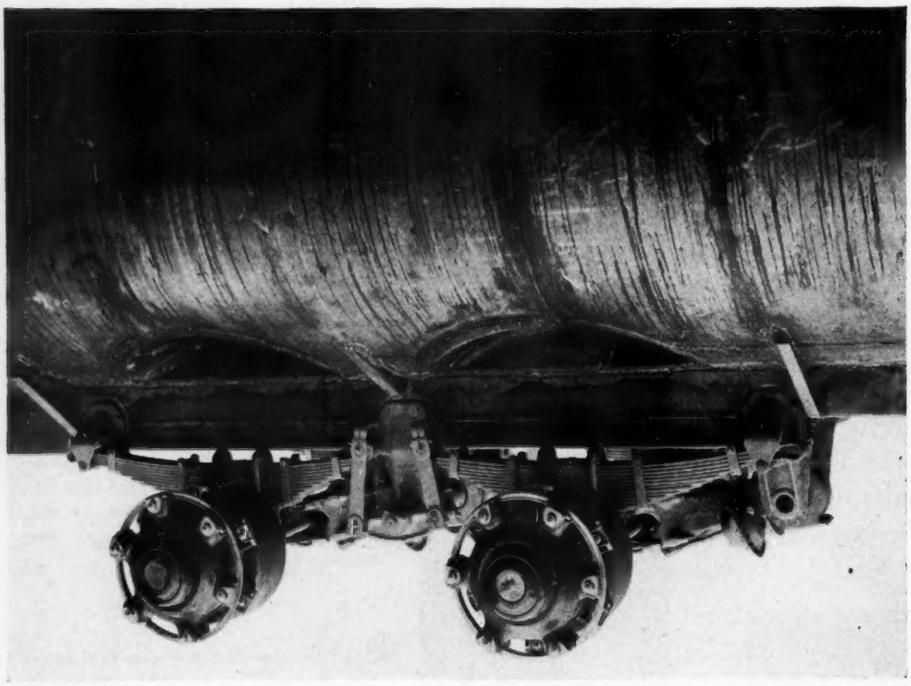
★ **Write today for full, free facts. The profit margin on a Field installation is definitely worth while. They require no servicing. The market in your community is almost unlimited, as nine out of ten installations need a money-saving, fuel-saving Field Barometric Draft Control.**

FIELD CONTROL DIVISION
MENDOTA, ILLINOIS

normally never require replacement. They usually outlast the vehicle.

Spring leaves on the tank trailers have depressed centers as well as center bolts which eliminate center bolt shearing. Each spring has one slipper end with a silent hook which maintains a rebound tension at all times and eliminates rattle and other noise. Side clearance of about a half-inch is provided between slipper ends and supporting brackets. This permits tracking of the axles to some degree, cutting down tire wear and eliminating side twist in springs due to uneven roads.

Attachment between the tank structure and the spring assembly is made at three points on each side, at the two spring slipper ends and at the center through the rocker arm brackets. Compared with the typical single point attachment, this distributes the load over a large area of tank structure, tending toward uniform rather than concentrated loading, avoiding high localized stresses and thus permitting use of lighter construction.



Exterior details of the tandem axle chassis and the unusual spring design

Each of the two axles is fitted with a Y-shaped torque arm. The forward end is rubber mounted and located centrally in the understructure on a cross bar. The two rear ends are held rigidly by large U-bolts to the axle near the springs. These torque arms perform two important functions: absorb brake torque reaction and act as radius rods and keep axles in alignment.

Conventional radius rod types, usually mounted above the center line of the axle, allow the axle to change location when the brakes are applied, and under certain road conditions both ends of the axle may not move in unison and the axle will not remain "square." This results in considerable side stresses on the springs, tires, frame, axle, and other parts.

In the new chassis design, the torque arms, being rubber mounted, absorb initial braking shock, reduce vibration stresses and aid to keep the axles in alignment with the vehicle. The rubber mounting eliminates adjustable radius rod ends which are subject to rust, rattles, and improper adjustment resulting in misalignment of axles. And another attraction is that the usual radius rod adjustment and lock nuts are eliminated.

A new design of differential dual wheels not only permits each wheel to turn independently at its proper rate of rotation, but insures synchronized braking action. This important feature, along with the special design of the tandem axle, such as the sliding slipper spring ends, rubber mounted axle shafts and rubber mounted torque arms, creates the possibility that tire scuffing will be practically eliminated.

Ordinarily, the distribution of petroleum products in Arkansas is by rail shipment. The Office of Defense Transportation, because of difficulty in obtaining tank cars for long haulage, urged petroleum companies to forego the use of tank cars for tank trailers for shipments up to 200 miles. Complying with this request, Esso Marketers acquired and are now operating the seven new tank trailers.

Depending upon the availability of petroleum products for distribution, the seven vehicles will have an output capacity of between 2,000 and 2,500 tank car loads annually—representing the placing into war service of thirty-five to fifty tank cars, Mr. Winchester said.

◈

Steel Boiler Men Elect

STEEL HEATING BOILER INSTITUTE re-elected Homer Addams president of the Institute at the annual meeting held at Hershey, Pa. Mr. Addams is president of Fitzgibbons Boiler Co., Inc., New York.

R. B. Dickson, president of Kewanee Boiler Corp., Kewanee, Ill., was elected vice president. W. J. Parker, secretary treasurer and Montie L. Heminway, executive secretary, were re-elected. J. E. Axeman, general salesmanager of Spencer Heater Division, Williamsport, Pa., was made a member of the executive committee.

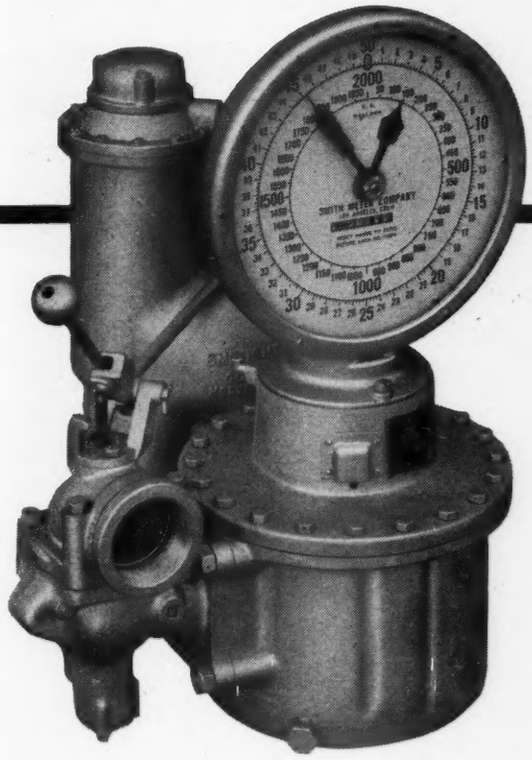
The board of directors consists of the following: Homer Addams; F. B. Hebard, president, The International Boiler Works Co., Philadelphia, Pa.; A. E. Jennings, Struthers Wells Corp., Titusville, Pa.; A. P. Weiss, Burnham Boiler Corp., Irvington, N. Y.; J. F. Johnston, president, Johnston Brothers, Inc., Ferrysburg, Mich.; John C. Trefts, Jr., Farrar & Trefts, Inc., Buffalo, N. Y.; J. E. Axeman, John R. Collette, vice-president, Pacific Steel Boiler Division, Detroit, Mich., and R. B. Dickson. Messrs. Hebard, Jennings and Weiss, retiring board members were re-elected to the board.

◈

J. D. Collins, vice-president in charge of sales and a director of the Tidewater Associated Oil Company, has been appointed Director-in-Charge for District One of the Petroleum Administration for War. He succeeds H. W. Dodge, who is returning to his former duties as vice president of The Texas Company.

F. C. Evans has been appointed representative of Research Products Corp., Madison, Wis., in the St. Louis area.

$10.00 A MINUTE $6,000.00 PER DAY!



Sustained accuracy — that's the vital consideration when choosing petroleum meters. For petroleum meters measure *money!* A meter handling 200 gallons per minute of liquid costing only 5c per gallon measures $10.00 worth each minute—$6,000.00 *worth each* 10-*hour day!*

That is why *sustained accuracy* is the focal point around which *all* Smith Meters are built. The simple, time-tested Smith Rotary Principle, and exclusive Smith design, provide an unequalled combination of metering *speed* and *sustained metering accuracy.*

Smith Meters in a full range of capacities and in models for trucks, loading racks, refinery and pipe line service are available on priority.

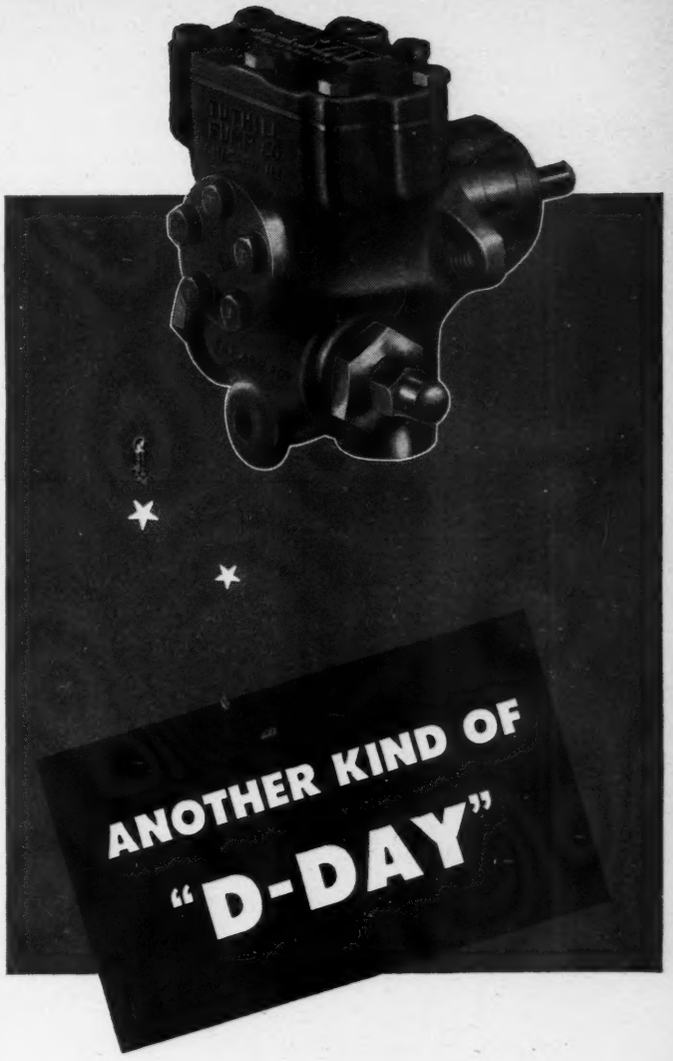
★ ★ ★

SMITH TRUCK METER MODEL T-15 (*Illustrated above*) *No pistons—no valves to wear. Easily adapted to any piping arrangement—24 combinations of counter, inlet and outlet positions.*

SMITH METER COMPANY

SUBSIDIARY OF A. O. SMITH CORPORATION

Factories at Los Angeles and Milwaukee



Here at Tuthill, we think of another kind of "D-Day" "Delivery Day" as that happy time when Tuthill Pumps and Fuelstats will again be DELIVERABLE to the industry. But as long as pump-power must play an important part in the winning of the war, Tuthill products must continue to be allocated to the fighting fronts.

So, until peace brings this "D-Day," look to Tuthill authorized service stations or the factory to keep present Tuthill equipment operating efficiently on the home front.

★

TUTHILL

SERVING ARMY
NAVY • AIR FORCE
MERCHANT MARINE

TUTHILL PUMP COMPANY

939 E. 95th ST. • CHICAGO 19, ILLINOIS

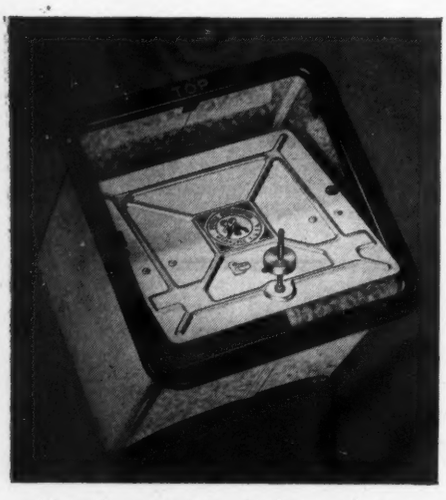
New Products

Penn Boiler Demonstrator Shows Complete Package

PENN BOILER and Burner Mfg. Corp., Lancaster, Pa., is using a display in which the boiler unit is fired while suspended from the floor, illustrating the fact that it is a complete package unit ready for "plug in" installation as received from the factory. Both boiler and furnace unit designs employ extended side plates which form a rigid compartment at the front of the unit, in which the burner is permanently mounted with all controls at the factory. Units are shipped with the burner adjusted for proper operation with the installed combustion chamber and the unit capacity. Dealers are not required to do field installation of unit parts. It is ready for connection to the stack, the oil and electric lines and to the distributing system. The company plans to start production as soon as permitted.

Perfex Draft Control

A new series of barometric draft controls with exclusive new features has been announced by Perfex Corp., Milwaukee, Wis.



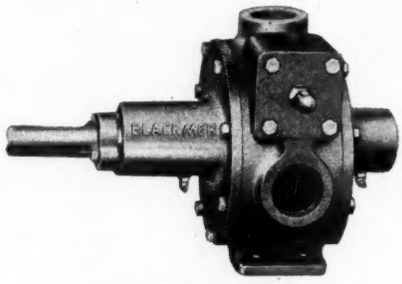
New barometric draft regulator

A completely new type of hinge pivot made of spring steel is featured in this barometric control. There are no bearings to bind or stick due to sediment or gumminess. This feature assures permanent calibration after the initial setting and contributes to the sensitivity of the vane. The square construction of the vane and the thimble channel allows 20% greater air volume than is obtained with conventional round-types. The vane itself is made of aluminum for lightness, which contributes to precision action and sensitivity.

An off-center turn-weight is used to adjust the action of the vane. Once adjusted, it retains its position without locking or setting. These controls can be easily and quickly installed in either a vertical or horizontal pipe. Four models, for use in pipes of sizes ranging from six inches to twelve inches, are available.

Blackmer Truck Pump

A NEW truck-mounted pumping unit released by the Blackmer Pump Co., Grand Rapids, Mich., differs materially in appearance and in certain details of design, from the present model, but the "Bucket Design," swinging vane principle of operation that characterizes all Blackmer Pumps, is used. The outstanding construction feature appears to be the double bearing arrangement, one on each side of the rotor. This placement of bearings aim to eliminate shaft "whip" and distortion.

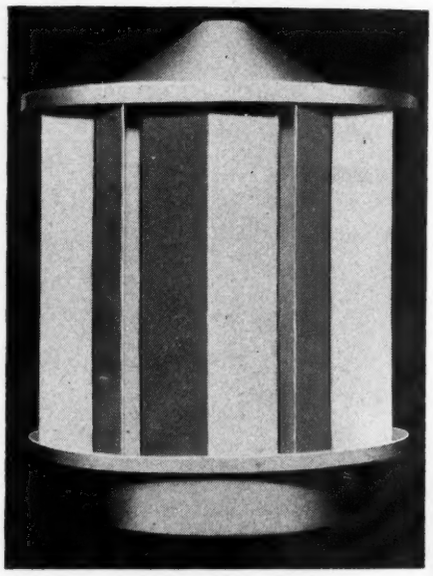


35 GPM truck pump

The new Blackmer truck pump is compact and light in weight, making it suitable for mounting on small trucks. It is designed for standard power take-off drive and has a capacity of 35 GPM at 525 RPM. Normal operating pressure is 45 psi. A Blackmer relief valve, built into the pump casing, will by-pass the entire capacity of the pump without shock or end-thrust on the working parts, and is free from "chatter." Suction and discharge connections are tapped for 1½" iron pipe. Provision can be made for mounting a standard Blackmer Ezy-Kleen "T" type strainer.

Exhauster Blocks Down-Draft

AIR DEVICES, Inc., New York, has announced a wind-actuated exhauster for gravity and mechanical exhaust systems that is claimed to give positive ventilation regardless of wind direction or velocity. Because there are no moving parts, the Agitair Exhauster is designed for long life and uninterrupted service. It is weather-proof and light proof, and eliminates down-draft.



Wind-actuated exhauster

Times Heat Cycles

HEAT TIMER Corp., New York, announces 3 new models of indoor-outdoor weather controls for multi-family residential buildings and large commercial installations.

These controls are designed for hand fired coal, oil-fired and stoker-fired boilers and incorporate several innovations in the design of weather controls. The Heat Timer is entirely electrically operated utilizing 24 volts to minimize installation expense. It includes an outdoor element and indoor element attached to either the system or the boiler and a control panel which may be mounted at any

INTERESTING AND VALUABLE BOOKS AND REPRINTS

"**Herkimer Service Manual.**" Now you can buy this famous manual. It is a complete service and installation guide for oilburners, gas furnaces, and stokers written for the expert as well as the beginner. It is distinguished as the bases of the Herkimer Institute courses. **$4.00**

"**Oilheating Handbook,**" by Han Kunitz, Newly revised edition. Clear and concise explanation of oil burner systems and classification. Discusses combustion and heating problems, surveys, installations and retail selling. **$3.50**

"**Short Cuts to Heat Loss Data.**" When you're figuring heat loss you can save time by using this accurate, easy method getting fast results without lengthy figuring.... **25c.**

"**Herkimer Coal Burner & Stoker Manual.**" Covers installation procedure. Also detailed explanation and remedy for 18 common trouble complaints with many subheads under each title. Includes a double-page stoker complaint and trouble diagram. This is a highly valuable tool for dealers and service men to use on the job. Prepared by practical men from regular daily experiences. 40 pages. Pocket size. Black, heavy paper cover. **$1.00**

"**Selling and Handling Fueloil.**" A 32 page booklet covers fueloil distribution from bulk plant to customer's tank. Covers planning and operating bulk plants, operating tank trucks, selling fueloil, specifications and variables, automatic deliveries, etc. ..... **50c.**

"**Oilburner Combustion Chambers.**" Complete and concise study, illustrated with charts, illustrations and reference tables. Text covers both precast and those built on-the-job. 23 pages. ..... **50c.**

"**Degree Day Handbook.**" Useful for computing oil consumption by the degree day method. **$3.00**

Because of the thousands of small orders we receive, we ask that cash, stamps, money orders or checks be sent with all orders. If you wish to order C.O.D., an extra charge of 10% is made to cover shipping and collection fees.

FUELOIL & OIL HEAT

232 MADISON AVENUE, NEW YORK CITY, N. Y.

When the honeymoon is over... grim reality takes the place of pleasant dreams. Right now, the air is full of romantic possibilities in the field of oil heating equipment for post-war. Don't get "hitched" in a hurry. When the time is right—talk to QUIET MAY!

The proven and dependable Dual Utility Oil Heating Unit will be included in the line when we resume production.

May Oil Burner Corporation
Baltimore-3, Md.

distance from either the outdoor or indoor elements.

The control panel includes provisions for operating either:

1. automatically in accordance with outside weather
2. cycling which provides a fixed number of "on" minutes of heating per cycle
3. a time delay provision for restricting the "on" cycle after circulation has been established in the building for a predetermined number of minutes.

One of the innovations in the control is the requirement that circulation must be established completely in the building before the timing cycle starts thus assuring adequate heating in the difficult portions of the building.

◈

Water Level Control For Any Type of Boiler

FARATRON Boiler Water Control announced by Lumenite Electronic Co., Chicago, is an electronic device to control both the water level and the firing of boilers of all types.

By the use of three electrodes of different lengths, mounted in a special fitting, directly connected to the boiler, any automatically fired boiler is under constant Control. These electrodes are connected, by a special cable, with the Faratron electronic unit, which can be placed anywhere desired, within 200 feet of the boiler.

When the water in the boiler drops below the end of the medium length or low level electrode, the intake valves are automatically opened or the feed-water pumps are started. The water continues to flow in until it contacts the short or high-level electrode when the flow is stopped.

◈

Wheelco Adds to Line

ADDITION of three new instruments to its line of industrial controllers, and refinements in a fourth, has been announced by Wheelco Instruments Co., Chicago 7, Illinois.

Two of the new instruments, designated Inputrols, are designed to control automatically or manually input of power, heat or flow of liquids or gases to any process equipment. The third, a Throttltrol, is designed to correct variations in heat requirements of furnaces and process equipment by positioning a valve in the fuel line. The company's Rheotrol, a manually operated controller for regulating input to electrically operated furnaces, ovens, heaters, kilns, etc., has been refined and is offered in a flush-mounted case.

◈

Thermo-Pilot—Stoker Timer

A PRIMARY STOKER CONTROL — Thermo-Pilot — that utilizes the principle of Thermal Action has been developed by the Perfex Corp., Milwaukee. First developed in 1939, it has been tested in actual home installations through four heating seasons and is now available for use.

This new control replaces the old conventional clock timing mechanism.

In operation, an electric current sup-

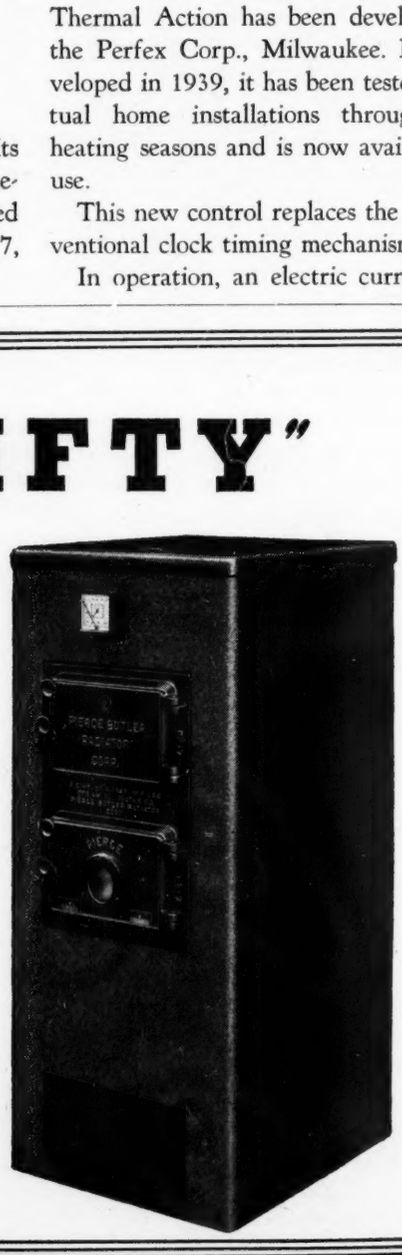
Top Efficiency for Steam, Water or Vapor Systems

PIERCE "Oil FIFTY"

. . . a designed-for-oil home boiler up to 10-room capacity

Product of extensive research and long experience with oil fuels, Pierce "Oil Fifty" stands high among today's leading boilers in heating efficiency and fuel economy. Size and shape of the heating surfaces are designed in relation to the flow of gases to give rapid absorption of the high heat production of oil fuels. The boiler is designed to accommodate a built-in domestic hot water heater for year-round use. Heavily-lined safe lock doors reduce heat losses. The inspection door is fitted with a Pyrex observation glass.

Five sizes of the Pierce "Oil Fifty" are scientifically scaled to the heat output needed by popular-size homes. Only a minimum space is required in your plan for this highly efficient heat machine. Specify for any system.



Write or wire for complete description and data.

Pierce Butler Radiator Corp.
SYRACUSE 6, N. Y.
Member — Institute of Boiler and Radiator Manufacturers

plies heat and enegry to the bimetal element. When sufficient heat has been stored in this bimetal element, a circuit is closed which energizes the stoker relay and places the stoker in operation. As the bimetal element cools, the relay is de-energized, the stoker stops and the cycle is repeated.

The hold-fire operation can be adjusted for short, medium or long operating periods at from one-half to one hour intervals to meet operating requirements. A special safety switch prevents hold-fire operations immediately after the stoker has been in operation at the command of the thermostat. There is no subsequent over-shooting of room temperatures.

The elimination of complicated timing mechanisms results in longer life, less wear and reduced servicing operations.

◈

Torrington Adds Several Sizes to Fan Line

ADDITION of several new sizes of propeller fan blades is announced by The Torrington Manufacturing Company, coincidentally with the release of a completely revised Airistocrat fan catalog.

To the Standard series, a 27 degree pitch has been added in the 10" and 12" diameters. There is a new P-1027 in the Pressure type fans or "P Series."

Perhaps the most important addition has taken place in the Autocrat fans. The size range in this type has now been extended with development of 8" and 10" diameters, each with five blades. A new 5½" five-blade, made special for some time, has now been listed as a standard product in the line.

The revised Airistocrat catalog contains complete NEMA and NAFM performance ratings for these new fans, as well as 159 others that go to make up the complete Torrington line of fan blades.

Other new material in the fan catalog includes a series of "Tips for the Design of Air Impelling Units."

◈

New Allen Pot Burner With Low Pilot Economy

ALLEN MFG. CO., Nashville, Tenn., has announced an improved pot-type burner for space heaters and other small capacity uses which utilizes a low pilot principle for fuel economy during the stand-by period. The burner has been listed by Underwriters' Laboratories, and is ready for production. It has been field tested for three seasons in various parts of the country.

The burner is made in three sizes up to 10 ins. in diameter. The pilot on the 10-in. size is reported to consume only 1/33 of a gallon per hour with low draft requirements. The burner is claimed to operate equally well with either natural or mechanical draft.

Neil H. Cargile, president, reports the company is prepared for volume production of the burners as soon as permitted, and is planning an aggressive advertising and sales campaign. C. B. Clemetson, formerly with American Gas Machine Co., is chief engineer and Walter M. Jones is sales manager.

◈

U-C Indicator for Drums

TECHTMANN Industries, Inc., Milwaukee, Wis., announces that the patented U-C Indicator has been made adaptable to 30-

On the Reel or Off the Reel ... This Hose Stays ROUND!

Kinkproof, non-flattening construction . . . a full inside diameter when either reeled or carried around sharp radius bends . . . are exclusive advantages of

"NEWTYPE CORD" Fuel Oil Hose

These and other features make "Newtype Cord" the most profitable hose you can buy. It takes less time for each delivery, because it is more quickly and easily unreeled and reeled, and the oil flows *faster* through its wide open, non-swelling "Synplastic" tube. Drivers say it's the easiest-handling hose they've ever used . . . light weight, flexible, no kinks to straighten out.

Equip your trucks, now, with this GOODALL quality hose, and start saving time, cutting costs and increasing profits on your fuel oil deliveries.

Contact Our Nearest Branch for Details and Prices.

GOODALL RUBBER CO., Inc.
MAIN OFFICE: 9 South 36 St., Philadelphia 4, Pa.
THE GOODALL-WHITEHEAD COMPANIES
New York - Boston - Pittsburgh - Chicago
Goodall Rubber Co. of Calif. Goodall Rubber Co. of Texas
Factory—Trenton, N. J. Established 1870

74 Years of "Know How" — Our Most Valuable Commodity

gal. steel drums in addition to the 55-gallon steel drums on which it has been used for several years.

The U-C tells at a glance the "inside story" about the liquid level content of drums containing oil, solvents, etc. Eliminates tapping, measuring, guessing—keeps constant check on supply of vital liquids.

It fits all 55-gal. and 30-gal. steel drums and is as easy to transfer as a faucet, merely screw the U-C Indicator into the drum faucet opening; then screw the faucet into the opening on the indicator body.

Heat Saver Uses Stack Gases for More Heat

OIL-ELEC-TRIC CO., Minneapolis, has announced the Guardian Heat Saver to extract and use heat otherwise wasted in stack gases. The rectangular, floor-mounted unit is installed between the heating plant and the chimney, and presents an additional 42.5 sq. ft. of heating surface to the hot gases. Air is taken off the basement floor and leaves the unit at the top, either to be used to warm the basement ceiling and first floor, or to be piped into the living space above. The unit requires a floor space of 12x24 ins. and weighs 115 pounds.

SID HARVEY OFFERS FREE A NEW TYPE OF CATALOG

If you service Oil Burners you will want this catalog written by experts for the SERVICE MAN. It describes a $150,000 stock that is composed of parts needed for maintenance.

Everything is illustrated so that you can recognize the part you need at a glance. There is a full description of all of the famous Harvey Service and Replacement "Packages."

A whole section is devoted to the "Oil Carrying" parts; Fuel Units—Mounting Flanges—Separate Pumps and Regulating Valves — Strainers, etc., with Burner names and model numbers, all illustrated for easy reference. Every page tells *all*.

It's loose leaf so that new pages and replacement pages can be readily inserted to keep it up to date.

It will be your service "Bible."

This catalog is for the TRADE only, and will be sent FREE if request is made on firm letterhead.

SID HARVEY INC.
VALLEY STREAM, NEW YORK

Attacks Rust

MANGANESED-PHOSPHOLENE No. 7, a rust dissolver, is a new product developed by Western Reserve Laboratories, Cleveland 13, Ohio. It dissolves rust and combines chemically with metal surfaces to form a rust-inhibiting coating which resists further rusting and corrosion.

Ready to use, it is brushed or sprayed on metal after oil, grease, or other foreign matter is removed. One application is sufficient for light rust, several applications for heavy rust. The rust dissolves no matter how heavily encrusted, and all possible rusting agents are thoroughly destroyed and removed.

It is packed in gallon, eight gallon, 32 gallon, 64 gallon units.

Sterilizes Air

HYGEAIRE, an ultra-violet air sterilizing radiator, made by American Sterilizer Co., Erie, Pa., now is being offered to the commercial field as well as to hospitals. The system is a combination of the G-E germicidal tube and a patented reflector in the fixture designed to project a zone of protection across an area above eye-level. Air-borne bacteria and viruses are carried into the zone of ulraviolet rays and to their deaths, by convected air currents, giving to the protected space the germicidal effect of 100 air changes per hour.

Siloo Attacks Sludge

SILOO, a non-inflammable, non-corrosive solvent has been announced by Petroleum Solvents Corp., New York, for the cleaning of oil storage tanks. It is claimed to remove polymerized gums and act as an inhibitor against electrolysis.

For domestic use it is recommended that one quart of Siloo be used to 275 gals. of oil, once every six months. On jobs subject to frequent strainer or nozzle clogging, it is recommended that the first treatment be a gallon to 500 gals. of oil, and for subsequent treatment a gallon be used to each 6,000 gals. of oil.

Price Increases Allowed For Baltimore Overhauls

BALTIMORE, where all oilburner service was free before the war, has been granted two easements from the frozen low price level for oilburner work in the area.

Amendment 1 to Revised Supplementary Services Regulation 19 of MPR 165, establishes a flat charge of $4 as maximum for "annual overhaul" services performed on burners once a year in the City of Baltimore and in Baltimore, Carroll, Harford, Howard and Anne Arundel Counties, Maryland. An additional charge of $1 is permitted where the service includes an Orsat analysis or other instrumental analysis of the flue gasses.

In another order under SR 19 to MPR 165, the applicable oilburner service rate for the City of Baltimore, a city of more than 500,000 population, is extended to the "Baltimore Metropolitan Area," which is defined as "that part of Maryland lying within a 15-mile radius of the dome of the City Hall of the City of Baltimore." This allows the city price of $2.50 for the first hour, and $1.75 for each additional hour of work by each serviceman to be charged for service work in the counties immediately outside the city limits.

Producers' Council Sees 800,000 Homes Annually

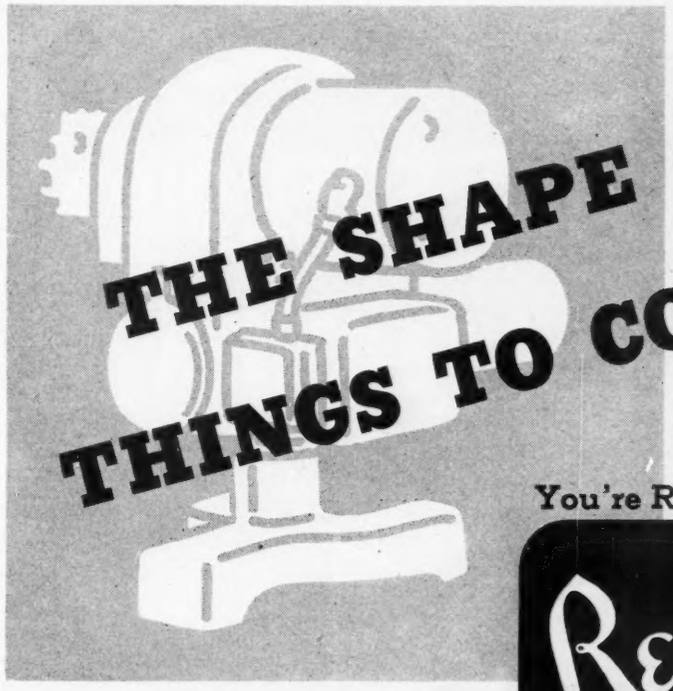
PROVIDING HOMES for newly formed families alone will require the construction of more than 800,000 new nonfarm residences each year during the first six years after the war, Douglas Whitlock, president of The Producers' Council, has stated in commenting on the recent survey of the National Association of Real Estate Boards which indicated that the rate of postwar residential construction would not exceed 300,000 units annually.

"If the 4,700,000 new families formed during the 10 years following the outbreak of war and the more than one million existing families which have no residence of their own are to be housed during the six-year period, substantially more than 800,000 new dwelling units per year will be required," Whitlock said.

"This estimate makes allowance for the nearly one million permanent family units built during the war period. But the total housing need is still greater, because there also are at least 4,200,000 substandard dwellings which ought to be replaced. Actually, the accumulated nonfarm housing need facing the nation during the six years after the war totals nearly 10,000,000 new residential units.

"New homes were constructed at the rate of 515,000 a year during the 5-year period, 1937-41, when nearly 9,000,000 individuals were unemployed, on the average. In view of the fact that the demand for new dwellings is greater than ever before and since the savings at the command of the American people are by far the largest in history, it seems inconceivable that the rate of residential construction after the war would fail to rise above the depression level predicted by the NAREB.

"The Market Analysis Committee of The Producers' Council has forecast that 350,000 new non-farm dwelling units will be constructed during the first year after the war and that an average of 970,000 units annually will be built dur-



THE SHAPE OF THINGS TO COME

You're RIGHT...with Rexoil

A GREAT, NEW LINE . . . . to be sold through EXCLUSIVE DISTRIBUTORS

All factors in the oil heating industry recognize the integrity, dependability and salability of REXOIL Oil Burners. Our Engineering Department is now at work on the *new, improved and complete line* that will carry on Rexoil's record of invincibility . . . when production is resumed.

Inquiries from potential Rexoil distributors are invited NOW.

REIF-REXOIL, INC., 37-41 Carroll St. BUFFALO 3, N. Y.

OVER 60,000 SATISFIED USERS

ing the following five years. This adds up to a total of 5,200,000 units as compared with only 1,800,000 units predicted by the NAREB for the first six postwar years. Various other estimates prepared by well-informed individuals and organizations have closely approximated or exceeded The Council's forecast.

"Even at the high rate of residential construction predicted by The Council and other sources, little more than half the total housing need would be met. The construction of 5,200,000 new dwelling units during the six years will barely provide for families without homes of their own, but fall far short of meeting the full need for replacement of obsolete and substandard homes."

◈

New Small Capacity Twin Pumping Unit

DESIGN AND OPERATING DATA on a new twin pumping unit has been released by the Blackmer Pump Co., Grand Rapids, Mich.

The specifications of the new unit are: Two standard Fig. 4202, No. 50 pumps mounted on a cast bedplate and connected through semi-enclosed reduction gears to an electric motor. Pump constructions available are all-iron, bronze-fitted or all bronze. Capacity of each pump is 3 GPM at a discharge pressure of 100 psi. Pump speed is 570 RPM. Unit is designed to handle fueloil, and similar liquids.

These units will later be available in larger capacities and high pressures for industrial applications where it is desirable to handle two different liquids through the same pumping unit simultaneously. Similar twin units are now available with clutches to permit either alternate or simultaneous operation of pumps.

◈

Cleans Pot Burners

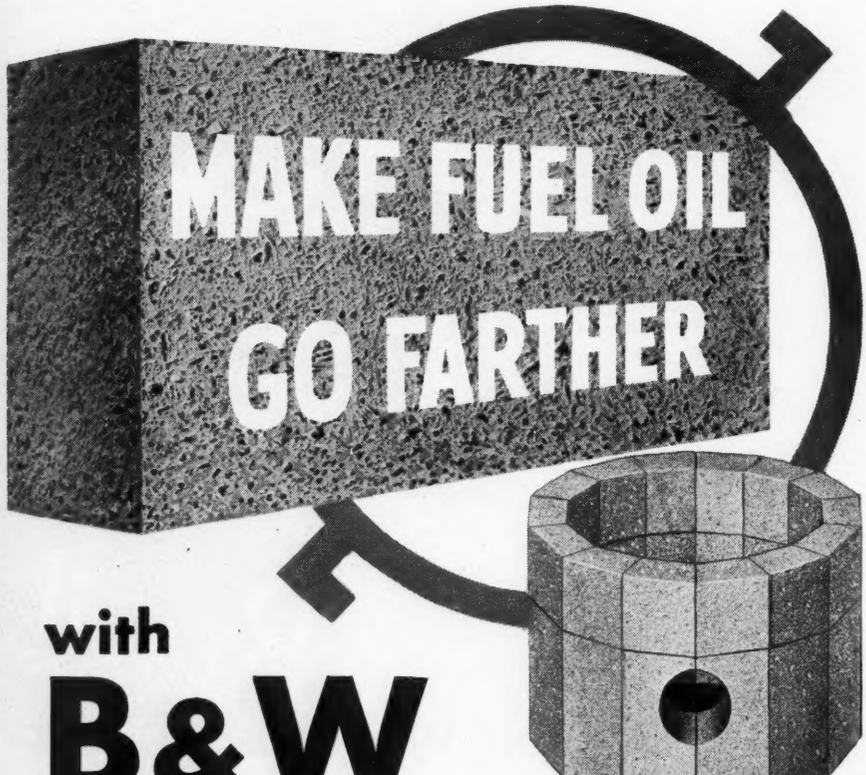
RED DEVIL Soot and Carbon Remover, which has been marketed for many years, recently has been improved to be more effective in pot-type burners where maximum temperature reaches about 750°, according to the manufacturer, Marine Electrolysis Eliminator Co., Seattle, Wash. Vaporized by heat, the remover is claimed to attack soot and carbon chemically. Red Devil is claimed to contain no zinc, charcoal, sulphur, potash or gun powder, and is non-explosive.

◈

Many Building Projects Already in Design Stage

CONSTRUCTION PROJECTS contemplated for execution in the postwar period have been reported by F. W. Dodge Corporation to the number of 41,805, with an estimated total cost of $9,581,538,000. These projects are all contemplated for the 37 states east of the Rocky Mountains; similar listings for the 11 Western states would probably increase the total by some twenty per cent, according to the Dodge organization. The project list has been accumulated during the past twenty-one months, and additional project reports are being received daily. Forty per cent of the projects by number, and forty-five per cent by value, have been reported in the design stage.

The largest classification, numerically, of contemplated postwar projects, is pri-



with
B&W
INSULATING FIREBRICK

With fuel oil so hard to get, you'll make your customers your friends by installing fuel-conserving B&W K-20 Insulating Firebrick combustion chambers in their heaters, boilers or furnaces. This lightweight insulation absorbs little heat, attains operating temperature quickly and answers the thermostat promptly. CO_2 increased, smoke and smell reduced. Easy to install. Will save up to 10 per cent on fuel consumption. Write for full details.

ARMY E NAVY

R-182

THE BABCOCK & WILCOX COMPANY
Refractories Division
85 Liberty St., New York 6, N. Y.

BABCOCK & WILCOX

vate residential building, the number of projects being 19,606 and total estimated cost $658,846,000; many of these projects consist of housing developments of varying numbers of buildings.

◈

Two-Day Timken Schools To Train Servicemen

TIMKEN SILENT AUTOMATIC service training schools will be limited to seven cities this year, though the company is reported to be spending more than twice as much on these seven schools as it did on more than 50 schools last year. Several service assemblies are being built to demonstrate operating parts of the equipment, including a Stroboscope to "stop" an oil distributor and made visible the delivery from each tube.

Each school will run two days and the evening of the first day, starting July 31 and August 1 in Chicago. Other schools will follow at Detroit, Aug.7-8; Syracuse, Aug. 14-15; Boston, Aug. 21-22; New York, Aug. 28-29; Philadelphia, Sept. 5-6; and Baltimore, Sept. 11-12.

◈

Industry Honored by More "E" Production Awards

YORK-SHIPLEY, INC., York, Pa., was given the Army-Navy "E" production award for its war work on June 28.

PENN ELECTRIC SWITCH CO., Goshen, Ind., was again honored on June 2, when the third "E" award put the second white star on the company's flag.

KEWANEE BOILER CORP., Kewanee, Ill., added the second white star to its Army-Navy "E" flag on May 27, signifying the third award for war production.

KRESKY MFG. CO., Petaluma, Calif., was awarded the Army-Navy "E" flag on May 6. The company has been oilburner manufacturers since 1910, but has been entirely on war work since Pearl Harbor.

◈

Empire State Association Establishes Research Group

PETROLEUM INDUSTRY Research Foundation, Inc. (Pirinc) has been organized for survey, analysis and publication work in the petroleum industry, and has occupied offices at 122 East 42nd St., New York 17, N. Y. The new non-profit organization, sponsored by the Empire State Petroleum Association, will be concerned with the collection and presentation of data on all phases of the oil industry, primarily with current and post-war marketing problems.

Pirinc is headed by Harry B. Hilts, executive vice-president; Henry Ozanne, director of research, and a board of directors comprising prominent oil men throughout the state.

BOSS MACHINE, Inc., has leased a site at Cold Spring, Minn., and will build a new oilburner plant as soon as construction is permitted. The company has been moved from St. Paul, and plans and development are under way for an improved and expanded line after the war. Though the company formerly operated locally, it is planned to distribute nationally through dealers postwar, according to Albert A. Stein, president. Besides oilburners, the line also will include accessory equipment.

BURIED TREASURE!

There's a hidden profit for you in FULFLO FILTERS!

And overhaul time is the time to cash in on it. If any of the oil-burners in your care don't have FULFLO FILTERS on them, by all means put one on now when you overhaul . . . on every burner, but above all, on the troublesome ones.

The profit on the original filter or the annual replacement of its Honeycomb Filter Tube is a small part of the story. The biggest profit is in freedom from troublesome service calls . . . by complete elimination of fouled points or clogged nozzles due to dirty oil.

The hidden profit lies in the word-of-mouth advertising you'll get from burner-owners who are not merely satisfied but *enthusiastically pleased* with their installations. This enthusiasm has a definite cash value to you. It's the best advertising you can get and it means more business and happier business.

But order *now!* We're making thousands of filters of all kinds for the Armed Forces. And while we've been able to take care of our oil-burner friends without too much delay, the Armed Forces come first!

COMMERCIAL FILTERS CORPORATION
Boston 27, Mass.

Fulflo FILTERS
REG. U.S. PAT. OFF.

Model AS-4 with replaceable filter element. Capacity 20 G.P.H. – approved by Underwriters. Throw-away unit, Model TU-4, has same capacity, costs about half.

SPECIFY FULFLO FOR POSITIVE DEPTH FILTRATION

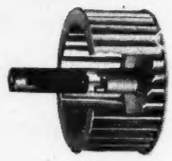
"Make Hay While The Sun Shines!"
PROMPT DELIVERY FROM STOCK—ANY QUANTITY

L-R FLEXIBLE COUPLINGS

L-R Type "UX" Double-flex Coupling
Take up shock and vibration and correct misalignment. Noiseless. Lengths overall: 3-piece: (Double Flexibility) 2⅜" to 4⅞"; 2-piece: 1¾" to 4¼". Type "IA" Uniflex also available.

NOW is the time for new installation or overhauling air conditioning and oil-burning equipment. Couplings are essential.

Make sure with the design, rugged construction and dependability of L. R.



Manufacturers supply fans with 1-R jaws on hubs.

LOVEJOY FLEXIBLE COUPLING CO., 5012 W. LAKE STREET Chicago 44, Ill.

Quiet May's dealer dinner at New York

May Wines-Dines Dealers

MAY OIL BURNER CORP. executives played host to a representative gathering of Metropolitan New York distributors, May 23, at the Hotel New Yorker. Keynote address was made by A. Klotzman, executive vice-president, who thanked the dealers on their continued loyalty to the company while it was 100% engaged in important war work. Charles Collins, sales manager, also touched on the deep family spirit that has always been a vital factor in the success of the company. The party celebrated the occasion by a visit to one of Broadway's livelier spots. Also present in behalf of the factory were J. C. Houff, L. Colliflower, E. R. Schuelke and J. O. Miller.

◈

H. P. Mueller, President of L. J. Mueller Furnace Company, Milwaukee, Wisconsin, also President of the National Warm Air Heating and Air Conditioning Association, has recently been elected President of the Milwaukee Rotary Club for the fiscal year.

Clarence C. Horner, Credit Manager of The Emerson Electric Manufacturing Co., died on May 25.

George P. MacDonald has been appointed vice president and traffic manager of the Sinclair Refining Co., the principal marketing subsidiary of the Sinclair Oil Corp.

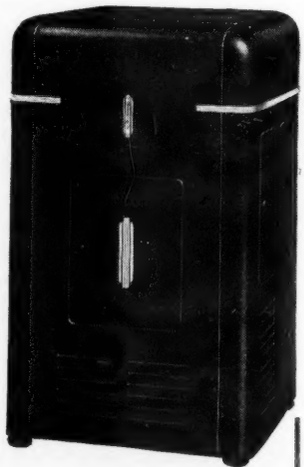
Allen's Oil Heaters
Keep The Home Fires Burning

The pilot light in the 10-inch burner uses less than one-third gallon of oil in a 10-hour period, operating on low pilot.
Listed as Standard by Underwriters' Laboratories, Inc.

AT CHICAGO FURNITURE MART
17th Floor
Spaces 111-12-13

Heating appliances rate high on the list of essential civilian needs and are in the vanguard of merchandise on which increased production is first permitted.

It will pay you to plan now to reestablish your stove business. The Allen line will enable you to meet the needs of your customers for better stoves and ranges. Write for catalog and prices.



ALLEN'S OIL-BURNING PARLOR FURNACE
Duotone Baked Enamel
Model 4110B

ALLEN MANUFACTURING CO., INC.
NASHVILLE, TENNESSEE
"Quality Stove Builders Since 1867"

More Heat per Gallon

(*Continued from page 41*)

formed, however, for he knew that soot and smoke come from plugging flues with pieces of firebrick, while lower stack temperatures and increased efficiency can be had from certain boilers by engineering into them the proper metal baffles.

This boiler just asked to be fitted with heat rakes, a type of metal flue baffle which I developed about 12 years ago and which has cut stack temperatures on some installations as much as 500°; the first two sets of heat rakes I installed produced, with no other changes on the installations, 40% fuel savings for one burner, 45% for the other. Descriptions and illustrations of heat rakes have been published several times. Briefly, they consist of heavy sheets of metal, roughly of V-shape, held in place by a piece of cold-rolled rod. They are spaced by proper lengths of ⅜" or ½" pipe slipped on the rod between the plates, and a nut on each end of the rod holds the assembly together. As the drawings show, the upper plates block about one-third of the upper part of the flue passages on this installation, and to get by them the flue gases must use mainly the lower part of the flues. The lower plates cause the hot gases to travel upward and around them. The design thus gives a long, tortuous up-and-down travel for the flue gases, together with an effective scrubbing action of the hot gases on all sides of each plate. Where heat rakes are found, on try-out, to cause plus pressure instead of negative draft over the fire, the assemblies are removed from the boiler and each plate is bent V-shaped along a vertical center line, so that it gives less reduction in the area of the flue passage. On this particular installation, such adjustments were not needed, for the first design of the baffles permitted maintaining .02" firebox draft while the smokehood draft was adjusted, using the draft regulator, for .08" (see the report on the fourth test).

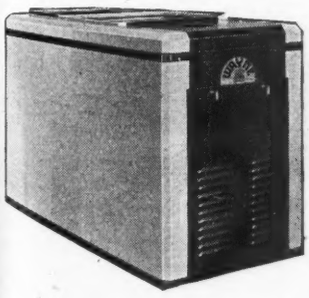
The first test after the baffles were installed was made with the burner adjusted to give a slight show of smoke from the chimney, to have this test on a basis comparable with that of the earlier tests. The test showed that the installation of the heat rakes had cut the stack temperature from 820° to 480°, and the flue gas loss from 25% of the heat in the oil to 16%. Mainly, because I did not want to pull the heat rakes and clean the boiler flues of soot two or three times a year, on this installation our final adjustments (see Fifth Test in the table) were for clean burning with no trace of smoke from the chimney.

Several weeks after the work was completed, I received a note from the oil dealer:

"*An accurate check-up shows that for a 35° day the job uses 19½ gallons of oil to heat the building to 70°. Before the changes, on the same kind of day 31 gallons of oil were used to heat the building to 68°. As I figure it, we are getting better than 59% more heat from each gallon of oil burned. A check-up of the on-off cycle of the burner motor shows that it runs about 35 minutes each time the thermostat calls for heat, and indicates that your final adjustments of the thermostat differential, which I understood were aimed to give about 30 minute "on" periods, are about correct.*

"*There is one flaw in the system, perhaps. We do not have the burner operating many hours a day, as you indicated*

WAYNE
OIL-FIRED



FURNACE UNITS

60,000 to 400,000 B.T.U.

PROMPT SHIPMENT
on proper priority

The complete line of Wayne oil-burning furnaces and burners is again available.

WAYNE OIL BURNER CO., 927 Glasgow Ave.
Fort Wayne 4, Indiana

WAYNE'S V-DAY LINE WILL BE COMPLETE
OIL-FIRED, GAS-FIRED, COAL-FIRED FURNACES, STOKERS, BOILERS, WATER HEATERS.
CONVERSION BURNERS FOR OIL AND GAS.
LINE UP WITH WAYNE FOR POST WAR PROFITS

LOOK
FULLY INTO THE FEATURES
of the POST-WAR
TEESDALE
T.U.X. OIL BURNER PUMP

- Fully Automatic
- Capacity 30 gal. per hour
- Self-priming
- Leak-proof
- Vapor-oil tight
- All parts are interchangeable

COMMUNICATE NOW WITH THE
TEESDALE
MANUFACTURING CO.
427 Market Ave., Grand Rapids 3, Michigan

is desirable to make for lowest oil consumption. As I figure it, the burner will use about 40 gallons of oil on a zero day. Firing 3.5 gph, it will run only 11½ hours on a zero day, the coldest we get here. May I cut the firing rate to 2.5 gph to gain further increases in efficiencies? Remember the thermostat is locked at 70 day and night, and we do not have to pick the temperature up mornings."

Here is my reply:

"I do not believe you will gain enough, by cutting the gph rate, to make up for the work you will have to do. However, it seems that 2.5 or 2.75 gph will heat the place nicely during coldest weather, though on a zero day it may cause the burner to run steadily for up to five hours at a time. If for the sake of academic interest you cut the firing rate, be sure to wind up with a firebox engineered for the smaller nozzle, and reduce properly the openings in the auxiliary refractory wall behind the firebox. Because a smaller fire will give lower stack temperatures, you will have to lower the setting of the new stack control that starts the circulator. Use of a smaller fire will cut the maximum CO_2 you can get with no smoke, but even then will, with the advantages of steadier running and lower stack temperature, give you a small but very definite increase in overall efficiency."

Fractional Motor Supply Tight, Committee Reports

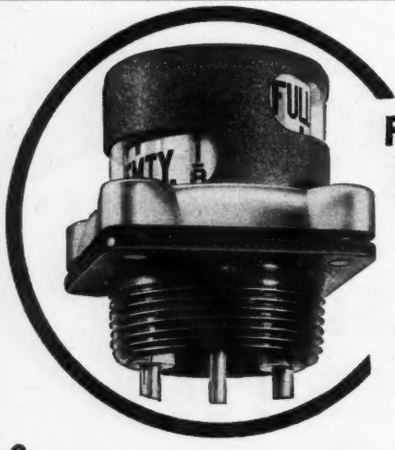
PRODUCTION PROGRAMS for fractional horsepower motors are being met at present, members of the War Production Board's Fractional Horsepower Electric Motor Industry Advisory Committee reported to WPB representatives at a May 25 meeting in Washington. However, the committee pointed out that additional motors probably will not be available for civilian use in view of the large military orders with which the industry is faced.

The supply situation with respect to standard A. C. fractional horsepower motors was discussed in detail. It was pointed out by committee members that this type of motor is the most critical of all types of fractional motors. It was also pointed out that manufacturers of standard A. C. fractionals have large backlogs of orders.

To remedy this situation, the committee recommended that use of the maintenance, repair and operating supplies (MRO) procedure for the purchase of such motors and products which require motors in their manufacture be limited.

Postwar marketing of fractional horsepower electric motors was also discussed by the committee. Members pointed out that after the last war, many duplicate orders for fractional motors to be used for civilian purposes were placed, and then canceled at later dates. Commenting on the resultant harm to the fractional motor producers' industry, they recommended that steps be taken to assure that a similar situation does not develop after the present war.

DOLE VALVE CO., Chicago, recently has issued a price sheet and several catalog sheets showing Dole air and venting valves for steam heating systems. Of particular interest is a selector sheet showing the proper valve to use for particular applications.



FOR CUSTOMER SATISFACTION *Install* ROCHESTER "UNIVERSAL" GAUGES

ROCHESTER "Universal" Gauges are built especially to meet the requirements of basement type oil storage tanks. Double dial —one visible to the delivery man outside the cellar, and one for the owner inside—is a convenient and much appreciated feature. Widely spaced, generous size graduations and figures are made possible by the extreme length of the dial which rotates through a 300° arc. There's no chance of leakage either.

The same magnetic principle used in Rochester Gauges to bring safety in gauging hazardous liquids under pressure is employed in these "Universal" Gauges. That's why they're listed as Standard by Underwriters Laboratories. Rochester "Universal" Gauges are easy to install in any location on the tank and without the necessity of emptying the tank. Obtainable on AA-3 priority from your jobber.

ROCHESTER MANUFACTURING CO.
8 ROCKWOOD STREET, ROCHESTER 10, N. Y.
Makers of Fine Gauges "FOR THE TRUE INSIDE STORY"

ROCHESTER Individually Calibrated GUARANTEED ACCURATE INSTRUMENTS
FOR ACCURATE LIQUID-LEVEL PRESSURE and TEMPERATURE INDICATION

DON'T WAIT— ORDER NOW!

Fig. F-80

You can get Monarch Nozzles for the coming heating season—but—you *must* place your order *now*.

War orders have been taking most of our nozzle output, but more should soon be available for domestic burner requirements as production will again be substantially increased by the end of the summer.

Do you have Catalog D?

MONARCH MFG. WORKS, INC.
E. WESTMORELAND AND SALMON STS., PHILADELPHIA 34, PA.

Ask More Burners

(Continued from page 38)

which the manufacturers held 26,950, and dealers held 44,725. The reported gross inventory of 25,781 Class B oilburners and units as of March 31, 1944, is less than 36% of the normal monthly average inventory, and is far below working level.

"Table 3 shows the average annual percentage of sales of Class B oilburners and units by types. Miscellaneous consists almost entirely of horizontal rotary burners.

TABLE 3

High Pressure	71.7%
Low Pressure	6.2%
Vertical Rotary	11.0%
Vaporizing	10.8%
Miscellaneous	0.3%

"Assuming an active demand for 80,869 replacement Class B oilburners and units at the start of the fourth quarter of 1944, and assuming that available stocks have been depleted before the end of July, production of Class B oilburners should be allowed the type and volume indicated in Table 4. If it be further assumed that the normal replacement demand is sufficient for the essential requirements in 1945, production for the next five quarters should follow Table 4.

TABLE 4

	% of Total	1944 4th Q.	1945 1st Q.	1945 2nd Q.	1945 3rd Q.	1945 4th Q.
High Pressure	71.7	57,983	8,844	8,844	8,844	8,844
Low Pressure	6.2	5,014	765	765	765	765
Vertical Rotary	11.0	8,895	1,357	1,357	1,357	1,357
Vaporizing	10.8	8,734	1,332	1,332	1,332	1,332
Miscellaneous	0.3	243	37	37	37	37
Total	100.0	80,869	12,335	12,335	12,335	12,335

"Due to the various indications of a greater demand than shown in Table 4, it is felt that these figures represent the absolute minimum demand for replacement. Any relaxation of restrictions on new installations will create an active demand for a minimum of 300,000 burners and units per year, or 75,000 burners per quarter.

"It is suggested that allotments of materials for the purpose of building the essential replacement burners necessary be made on an annual basis, if possible, rather than on a quarterly basis. Because of the relatively small number of burners represented by these minimum requirements for each type of burner, economical production would be impossible for any individual manufacturer if he were required to produce his annual allotment in four separate quarterly runs. It will be difficult for many to produce their annual allotment economically in a single run. The total accumulated requirements represented by the demand in the fourth quarter of 1944 represents less than 35% of the industry's normal production, and about 4% of its total capacity. The total minimum requirement for 1945 is 21 2% of normal production, and less than 2.5% of the industry's capacity.

"Average assembly time for a high pressure burner revealed by a survey of thirty manufacturers who produced 176,770 of these burners in 1941, was 1.8 man hours. One manufacturer who does all his own manufacturing in his own plant reports that total man hours re-

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Solve YOUR Oil Burner Problems with KLEEN-FLO

NOW available—the same Fuel Oil Conditioner that many of America's greatest Industrial concerns have been using for years. KLEEN-FLO increases Oil Burner efficiency, eliminates storage tank cleanings and pump-outs. Simply add KLEEN-FLO thru oil fill line—one quart conditions 500 gallons of oil—improves combustion, reduces carbon and soot formation—eliminates "puff backs", odor and smoky chimneys—overcomes water and sludge. Works with equal efficiency on any oil burner. Save extra service calls and make EXTRA year-round profits with KLEEN-FLO. Get the facts TODAY.

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FUEL OIL CONDITIONER
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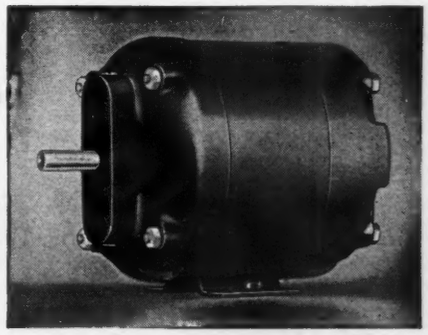
New York 18, N. Y.

A SMALL MOTOR



for General Purpose Applications

Types—Split Phase, Capacitor or Shaded Pole.
Speeds—1100, 1700, 3400 RPM.
Power—1/80 to 1/20 HP, depending on speed.
Voltages—Up to 220 A.C.
Frequencies—60, 50 and 25 cycles.
Bases—Solid, resilient or flange.
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Efficiency—High for such small powers.

What is your problem?

THE OHIO ELECTRIC MFG. CO.
5913 Maurice Ave., Cleveland, Ohio

OHIO reliable MOTORS

OHIO MOTORS

quired for all manufacturing and assembly operations, including controls, is 7.0.

"Low pressure burners which are almost completely made in the manufacturers' own plants require an average of 7.25 man hours, and vertical rotary burners require 7.0 man hours to build and assemble. Vaporizing oil burners usually are sold as a part of a furnace unit, and no breakdown of time is available for the burner apart from the furnace. It is believed that the total man hours required for a vaporizing burner would be amply covered by 1 hour, and miscellaneous types (chiefly horizontal rotary) by 10 man hours.

"Assuming an 8-hour day, and 75 working days in each quarter, the total manpower required to produce the minimum required volume of burners shown in Table 4 would be as indicated in Table 5.

"War work was taking 75.5% of the plant capacity of 27 typical manufacturers surveyed as of the end of February 1944. The remaining 24.5% of facilities is sufficient to build many times the minimum number of replacement burners requested. Only two of the 27 firms covered reported they were without any facilities for civilian production at the time of the survey. These two companies did 3.3% of the oil burner production covered in the survey. From this it would seem that there is plenty of plant capacity to produce the minimum necessary replacement burners without interference with war work.

Summary

"There is a critical shortage of Class B oil burners at present and present usable inventories will be completely exhausted by the middle of July. Minimum needs for replacement purposes can be met without interference with war work in manufacturers' plants, and with a minimum of skilled labor. Replacement burners are necessary to keep the present civilian economy in balance. It would be impossible at this time, due to manpower shortages, and the inability of other fuels to pick up the increased demand, to convert these installations to other fuels. This would create a waste of manpower and money that cannot be afforded at present. Also, the emergency service required for badly worn burners now in operation puts a severe strain on the manpower in the field which could be partially alleviated by replacing these troublesome burners with new equipment."

TABLE 5

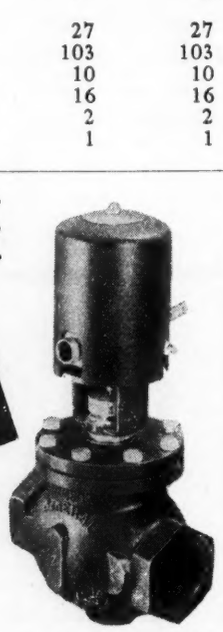
Type	1944 4th Q.	1945 1st Q.	1945 2nd Q.	1945 3rd Q.	1945 4th Q.
High Pressure					
Assembly only	174	27	27	27	27
Total Manufacturing	677	103	103	103	103
Low Pressure	61	10	10	10	10
Vertical Rotary	104	16	16	16	16
Vaporizing	14	2	2	2	2
Miscellaneous	4	1	1	1	1

◈

Godfrey Strelinger, formerly assistant to the general sales manager, Nash Motors Division, has been elected treasurer and assistant secretary of Nash-Kelvinator Corp., filling the post recently vacated by the death of G. V. Egan.

HIGH PRESSURE

G-1 SERIES



G-1-1 Hydramotor Valve

TWO-WAY
CURRENT FAILURE VALVES

General Controls G-1 Series Valves are two-way current failure *Hydramotor Valves designed for operating pressures up to 300 lbs. G-1 Valves are suitable for gas, oil, water, air and steam. Approximate opening time 8-10 seconds; closing—2 seconds. Operator dimension only 4¼", diameter 6" high, weight approximately 7½ lbs. Write for Catalog 52.

*Trademark registered United States Patent Office.

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is the Name to Remember

— for oil burners . . . oil-designed furnaces and boilers *that assure you of:*

- ✓ Satisfied, loyal customers
- ✓ Minimum service trouble
- ✓ Efficient, economical operation
- ✓ Design features that sell
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H-1

HEIL ANSWERS UNCLE SAM'S CALL . . . and helps the Arsenal of Democracy supply materials for Victory!

THE HEIL CO.
GENERAL OFFICES: MILWAUKEE, WISCONSIN

Last Month-

FURNACE PRICES were permitted an increase of 9% over the manufacturers' lowest published list prices in effect on August 4, 1943, for cast iron units in sizes up to 900,000 Btu at the register. This Amendment 42 to Order A-1 of MPR 188, effective June 24, also increases prices for manufacturers of repair parts for both cast iron and steel warm air units.

CAST IRON RADIATION of the tubular type may be produced only in the following sizes: 3-tube, 25 ins. high; 4-tube, 19, 22 and 25 ins. high; 5-tube, 22 and 25 ins. high; and 6-tube, 14, 19, 25, and 32 ins. high. Schedule VI of L-42 also limits wall radiator production to that necessary for government use.

HOT WATER TANKS, range boilers and expansion tanks may be produced in a fixed ratio to the number of such tanks a manufacturer produced in 1941. Manufacturers of hot water storage tanks may produce in each calendar year 75% of their 1941 production, and manufacturers of range boilers and expansion tanks may make 70% of their 1941 production. To the end of 1944, each manufacturer is allowed 7/12 of his annual quota, according to L-199, amended June 20.

STOVE PRODUCTION has been freed from the concentration of production program under which the industry has been operating. Manufacturers of cooking and heating stoves, on application to the WPB Plumbing & Heating Division at Washington, will be allowed to manufacture only those types that they made in the base period (July 1, 1940 to June 30, 1941).

INDIRECT WATER HEATERS and direct-fired side arm water heaters now can be made more durable and satisfactory by the June 2 amendment to L-185. Indirect heaters are permitted to be made with brass terminal outlets and spacer plates, and side arm water heaters now may be made with copper coils and brass terminal outlets.

◈

Fueloil Rationing Changes

Amendment 9, effective June 3, establishes over-all ceilings for heating stove rations under a new calculation table. Boards are empowered to issue rations below the ceilings, according to minimum needs.

Amendment 10, effective June 6, allows the use of Period 1 coupons on receipt by the consumer, to encourage the filling of consumer tanks. It also limits summer oil stove rations to those who have been accustomed to make the change in other years, and already have the necessary equipment.

Amendment 11, effective May 27, provides for monthly written reports of fuel-oil shipments not covered in primary suppliers' monthly reports.

◈

YORK CORPORATION, York, Pa., has just issued a new loose-leaf catalog of accessories and supplies for refrigeration and air conditioning plants.

The book is designed to give quick, complete "finger-tip" information on accessories and supplies, ice cans and air fittings, valves and fittings, oil, cold storage doors, renewal parts, tables and data.

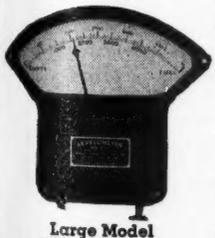
WITH OIL CONSERVATION MORE VITAL THAN EVER, Its Accurate Check-Up IS IMPORTANT—

INSTALL LEVELOMETER Tank Gauges

"THEY'RE ALWAYS DEPENDABLE"

Midget LEVELOMETER Lowest priced Remote Reading Gauge Built

Small Model LEVELOMETER 6"x6" case



Large Model LEVELOMETER 12"x12" case

A LEVELOMETER gauge on an oil tank installation eliminates guesswork—it insures accurate readings at all times.

Convenient, remote reading:—LEVELOMETER dial may be located at any reasonable point from tank and—large graduations and numerals make it easy to read.

LEVELOMETER tank gauges, approved by Underwriters' Laboratories, operate on an exclusive adaptation of the hydrostatic principle. No liquid is used in indicator to be affected by temperature changes, to evaporate, stain glass or to be blown out due to excessive pumping.

Get complete details regarding LEVELOMETER tank gauges—the Remote Reading gauges that insure accurate—trouble free check-up.

THE LIQUIDOMETER CORP.
36-19 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

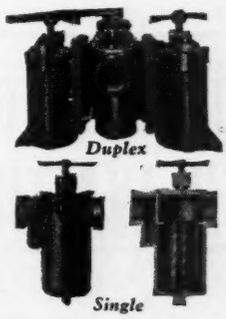
Proven by PERFORMANCE—

KRAISSL

Filters • Strainers • Pumps for FUEL OIL

Intelligent engineering is only the starting point. Consistent on-the-job performance over many years provides practical endorsement of KRAISSL design and manufacture.

Class 72 Strainers and Filters



Single and Duplex types for suction or discharge service—any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.

Kraissl-Trumbull No. 522 Fuel Pump Unit

Rugged, dependable wall pump for gravity type oil burners having burning capacity of not more than 3 gals. per hour—Approved by Underwriters' Labs., Inc.

Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

THE KRAISSL COMPANY INCORPORATED
295 Williams Ave., Hackensack, N. J.

Postwar Fueloil Cost

(*Continued from page 36*)

umes of the total production of the oil industry, the market for heating oils presents a bright prospect for the future. Whereas, in 1941, distillate heating oils for oil burners and space heaters equalled 28 per cent of the automotive gasoline demand, authoritative economists estimate that by 1950 they will equal 49 per cent of the gasoline demand.

The broad plans for building construction, the usefulness of such construction as a means of employing vast numbers of workmen, the technological developments in the design, the manufacture and efficient operation of oil burners for home heating, all combine to make the marketing prospects for home heating oils particularly attractive for the oil industry and for the oil burner industry.

(5) It is estimated, however, that all of these demands from all industries, for all purposes, would not exceed our pre-war total domestic consumption until the year 1947, and that in 1950, six years after the close of the European War in 1944, the total post-war demand for all petroleum products will represent only an 11 per cent increase over 1941.

The internal operating conditions of the industry, estimated for the post-war period, warrant serious study.

(1) Present crude oil production in the United States is in excess of 4,500,000 barrels per day; our pre-war peak was less than 3,900,000 barrels per day. This tremendous increase was achieved, in spite of governmental limitations on prices, materials, and manpower, by the patriotic cooperation of American oil producers, who not only drew heavily on their reserves from their presently existing wells, but spared no effort or expense in the development of new wells and new oil fields. So successfully did these producers discharge their responsibilities that, in spite of 1943's record breaking production, the total reserves at the end of 1943 were only one-tenth of 1 per cent less than at the end of 1942.

"Thus, again, despite governmental handicaps, these patriotic American oil producers have demonstrated the fallacy of the cry "shortage of oil" and have proved that the petroleum reserves of American companies will adequately and completely serve our needs for many, many years to come."

(2) In view of the reduced markets for the total volume of petroleum products, and in view of the reduced consumption of gasoline, which, in the recent history of the petroleum industry, has been the industry's most important constituent, the future aspects of the petroleum industry require severe analysis. Authorities estimate that if the stocks of all petroleum products are maintained at the 1941 levels, which would be quite high in view of the lowered demand, and if unlimited demand for kerosene, distillates, and residual fuel oils is permitted, the reduced consumption of gasoline will require the refineries to operate on a basis of a 33 per cent yield of gasoline from a barrel of crude in contrast to the 44 per cent yield averaged in 1941. This reduction will result from a shortage of automotive equipment in the post-war period and from the war-developed increased efficiency of refinery processes. The industry's requirements for crude oil runs to satisfy these projected domestic markets in the immediate post-war period may decrease from the present 4,500,000 barrels per day to

"EDCO" PRODUCTS ARE WORTH WAITING FOR!

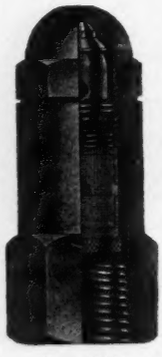


Fig. 246

Right now, "EDCO" production is bigger than it ever was in peacetime. Due to the ever increasing demand for "EDCO" Pumps, Pressure Regulating Valves, Pipe Line Strainers and Spray Nozzles by our Armed Forces, there is nowhere near enough left to meet the civilian demands — but they will be worth waiting for.

"EDCO" products have been good in the past. They will be better in the future—proved on the battle fronts of this war. They'll have still greater dependability assured by the vast experience and unusual exacting manufacturing standards which are adhered to.

With Victory and Peace, "EDCO" production lines will keep right on producing trouble-free accessories to help you build the better world for which we are all fighting.

"Specify EDCO Products on Your Next Order."

EDDINGTON METAL SPECIALTY CO.

P. O. BOX K,

EDDINGTON - PENNA.

Easy Extra Sales, because--

Your Customer must Save Fuel

10% to 25% Fuel Saving. Easily, Quickly Installed. Fully Automatic. No Servicing.

Cole DRAFT Governor

Standard domestic round style — Sizes 5" to 18"

Any season, Cole Draft Governors will earn you a tidy profit in easily-made *extra* sales. *This* season — in the face of fuel rationing — Cole Draft Governors will earn you the lasting satisfaction of customers that follows increased comfort, heating efficiency and *fuel economy*.

The time to sell Cole Draft Governors is RIGHT NOW. You'll find a large waiting market in your community, as more than 75% of the oil-burning installations *need* this control.

A complete line of draft controls for every size and type of heating and power plant — from the smallest domestic to the largest industrial installation.

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VENTALARM

FUEL OIL DELIVERY

THE MODERN METHOD

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Vinco Products for Cleaning and Conditioning Heating Systems

Easy - Economical - Thorough *and Safe*

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The Vinco Co., Inc.

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the estimated level of approximately 3,800,000 to 4,000,000 barrels of crude oil per day for the years 1946, 1947, and 1948.

The possible reduction in automotive gasoline consumption from a pre-war peak of 633,000,000 barrels to a probable minimum of 575,000,000 to 600,000,000 barrels, during the two years in the immediate post-war period, may conceivably result in a reduction of the prices of gasoline and other products somewhat below their present levels, in spite of any post-war inflationary forces. It is conceivable, therefore, that, to conduct a balanced operation, the refineries may be unable to pay even the present prices for crude oil, and reductions in the prices of crude oil may be temporarily suffered by the oil industry during the early years of the immediate post-war period. Thereafter, however, authorities estimate that the expanding production of motor cars will have increased a demand for automotive gasoline beyond its pre-war level, with resultant firming in the prices of crude oil, gasoline, and other petroleum products.

To those of us who have consistently advocated the equity and necessity for wartime increases in the prices of crude petroleum and its products—considerations of a probable post-war reduction in their price levels may come as a shock and disappointment. Let us, however, reflect upon recent history. In late 1939 and early 1940, the fall of France and the elimination of other European customers temporarily shut off the major portion of our exports—a decline of perhaps 150,000 barrels per day; prices of petroleum and its products dropped ruinously low.

At the end of the European War, our

Get FUEL-SAVING FACTS with this modern COMBUSTION TEST SET

Cooperate with our government's National Fuel Efficiency Program and build your reputation for expert, fuel-saving service . . . by using these practical instruments to make efficiency tests of heating plants. The easy-to-use FYRITE quickly indicates CO^2 in the flue gas, thus showing whether the fuel receives the proper amount of air. The Stack Thermometer test shows how well the furnace absorbs the heat of fuel burned. The unique FIRE Efficiency FINDER correlates CO^2 and stack temperature readings to show at a glance preventable chimney losses. The handy dry-type DRAFTRITE gauge is indispensable for properly adjusting the draft.

For prices, and complete particulars about the Fyrite Combustion Set, write for Folder 4401.

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Quality Fuel, Diesel, and Heating Oils for a Nation on the Road to Victory

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DEPENDABILITY

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total demand—domestic and export—will doubtless decline a net amount of perhaps 500,000 barrels per day below war-time levels, over three times the 1939-40 decline. Also, the 1939-40 price reductions occurred when domestic automotive consumption was high and when general business conditions were advancing into a war boom; the post-war period will be marked by a shortage of automotive equipment and a severely declining post-war business activity.

With crude oil production high, refinery operations at peak levels, storage facilities well-nigh full, reduced gasoline demand, and general business contracting from war operations, a downward readjustment in prices of petroleum and its products appears, to competent economists, to be inevitable in the immediate post-war period.

The possible or probable occurrence of such eventualities should not cause apprehension, but should warrant study and preparation; being cognizant of them, all of us in the industry may be better equipped to deal with any such probabilities as they may become actualities.

Such considerations are not confined to the oil industry, for economic authorities agree that temporary price reductions undoubtedly will occur in the immediate post-war period in those war materials and their products whose war-time production has been so vigorously accelerated that it can not decelerate quickly enough to match the lower demand in the early post-war years.

Under our ultimately freer economy we moved from necessary war-time governmental controls. The normal working of the laws of supply and demand will readjust these price levels, particularly those of petroleum and its products and should elevate them to a comparable place stratum in the inevitable long period of prosperity beyond our immediate post-war years.

(3) The war has stimulated the development of various refining processes—polymerization, alkylation, hydroforming, hydrogenation, isomerization, and many other processes with astounding names. Chief among these, however, has been the development of the process of catalytic cracking to increase the flexibility and efficiency, and to reduce the cost, of manufacturing various petroleum products. The developments in catalytic cracking have been so pronounced that in the post-war period with reduced demands for the quantity of gasoline, and with increasing demands for its higher quality, it may well eventuate that the less efficient and higher cost thermal cracking units in a refinery will be temporarily closed down, and the more efficient catalytic cracking units will continue to be operated to produce at a lower cost, the necessary volume of gasoline. The possession of catalytic cracking units, therefore, will put those fortunate refiners in a more favorable position to weather the future temporary economic difficulties.

During the war catalytic cracking facilities were installed in those refineries which in 1940 represented 72 per cent of the throughput on the East Coast and the Gulf Coast; so far, catalytic cracking facilities have been installed in only 24 per cent of the 1940 throughput capacity of the refineries in the Mid-Continent area. Post-war operation of the more efficient, lower cost catalytic cracking facili-

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The Original. Still the Best. Hundreds of Thousands in Use. • Holds the draft constant in the fire box. • Scientific draft control for the smallest to the largest jobs. • Stove, domestic, and commercial sizes from 4" to 24" in diameter. • Industrial sizes from 24" x 24" to 5' x 12'.

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HAND CRIMPING TOOL

IT CUTS AND STRIPS AND ALSO CRIMPS
Rajah Terminals to ignition cable without the use of solder or any other tools

The RAJAH COMPANY.
Bloomfield, N. J.

GILCO
Automatic
OIL-BURNING WATER HEATERS
FOR GOVERNMENT PROJECTS
J. L. GILLEN CO.
DOWAGIAC • • MICH.

OIL SOOT E-Z DESTROYER
WAR ON WASTE!
Increase efficiency of oil by keeping heating unit free from excess soot. All oil soot in fir chamber and flues vanishes instantly when sprayed with E-Z Fuel Oil Soot Destroyer.
"EASY TO USE— ECONOMICAL TOO!"
DISTRIBUTORS: Write for fine proposition.
HEALY-RUFF COMPANY, 707 Hampden Ave., St. Paul, Minn.
Enclosed find check ( ) money order ( ). Send the following prepaid:
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No. 5 pkg. .... 4.50 City ..... State.....

cies, combined with the war-created efficient facilities for transportation, will profoundly affect the pre-war quantitative and qualitative conceptions of markets for gasoline, kerosene, distillates, and residual fuels.

The war-developed refining processes will produce marked effects on the post-war quantity and quality of heating oils. The probable emphasis on catalytic-cracking facilities warrants considering those processes—mainly now equally divided between Houdry and Thermofor on the one hand and Fluid catalytic cracking on the other. Both processes perform efficiently, making high-quality products at low cost; each process has its ardent advocates. In general, however, the Fluid Catalytic-Cracking Process can handle heavier charging stock over a wider range of operating conditions, making equally high-quality products in comparably great volume from lower-priced and lower quality charging stocks. This is of particular significance to refiners and to you fuel oil distributors located on the East Coast, where increases in post-war imports of heavy crude oil for fuel purposes may occur.

The main point for you fuel oil distributors to recognize is that regardless of the type of catalytic-cracking process, you will receive, in the post-war period, increasing quantities of catalytically cracked fuel oils, whose specifications will vary somewhat from pre-war specifications, but whose dominant characteristic will be "more heat units per gallon"—a most timely and potent sales argument for you to make to your customers.

◈

OPA Ration Division Conducts Hardship Survey

BECAUSE HARDSHIP RATIONS for consumers needing additional oil have been a cause of much difficulty and dissatisfaction to local boards, fueloil distributors and their customers, the Fuel Rationing Division of OPA is conducting a field survey of a minimum of 10,000 cases. This will bring the first authoritative data on the circumstances surrounding the issuance of hardship oil, the reasons, the amounts and other relevant factors.

After carefully selecting representative cities and towns for the check-up, men from the Washington office and from district offices are gathering the statistics. For each account a 5 x 8 card is filled in by the investigator. On the face of the card 15 characteristics of each ration are entered for both the 1942-43 and the 1943-44 seasons. On the card's reverse side is detailed any additional oil given after the original ration was issued. Separated to 12 reasons for giving additional oil, the amounts so given are entered by months in each season.

The data will be analyzed before the end of the Summer and the Division will be in position to design amendments for hardship issuance in the coming season on a better foundation of fact than it has previously had.

◈

A. B. Allen, manager of the Minneapolis Division of the Skelly Oil Company died on June 14.

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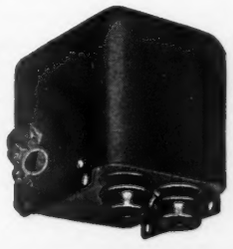
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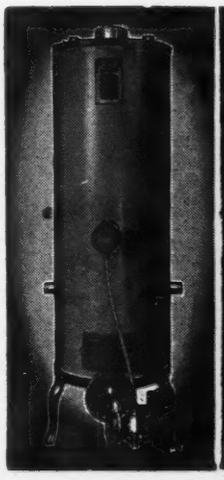
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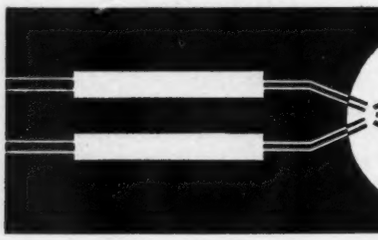

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